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OF COUNSEL

SANTA FE, NEW MEXICO 87504-2265

June 18, 1991

**RECEIVED**

JUN 18 1991

OIL CONSERVATION DIV.  
SANTA FE

Mr. William J. LeMay  
Oil Conservation Division  
Post Office Box 2088  
Santa Fe, New Mexico 87504

Re: Application of Warrior, Inc. for  
a Leasehold Pilot Waterflood  
Project, Including Authority for  
Expansion, Lea County, New Mexico

103-117

Dear Mr. LeMay:

On behalf of Warrior, Inc., please find enclosed our application and accompanying Division Form C-108 seeking authority to institute a waterflood operation on its Federal "D" Lease in the Eumont Gas (Yates-Seven Rivers-Queen) Pool, Lea County, New Mexico.

We suggest the following as an advertisement for the notice of hearing provided for the New Mexico Oil Conservation Division docket:

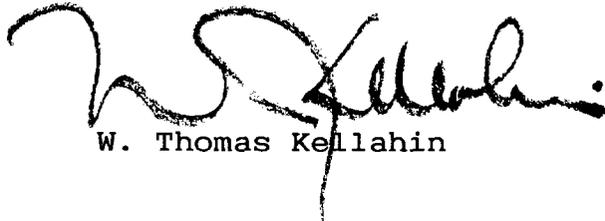
Application of Warrior, Inc. for a pilot waterflood project, Lea County, New Mexico. Applicant in the above-styled cause seeks authority to institute a one well pilot waterflood project on a portion of its Federal "D" Lease underlying the W/2 of Section 26 and the NE/4 of Section 27, Township 20 South, Range 36 East, N.M.P.M., by the injection of water into the Eumont Oil & Gas Pool, through the perforated interval from approximately 3804 feet to 3964 feet in its Federal "D" Well No. 2, located 1980 feet FNL and 660 feet FWL of Section 26. Applicant further seeks an administrative procedure for the expansion of the leasehold waterflood project by the drilling of new injection wells or the conversion of producers to

Mr. William J. LeMay  
June 18, 1991  
Page 2

injection within the leasehold. Said project area is located approximately \_\_\_\_\_ miles \_\_\_\_\_ of \_\_\_\_\_, New Mexico.

By copy of this letter and application, sent certified mail, we are notifying all interested parties of their right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application.

Very truly yours,



W. Thomas Kellahin

WTK/tic  
Enclosure

cc: Mr. M.Y. Merchant  
Unique Engineering  
Post Office Box 5970  
Hobbs, New Mexico 88241

Certified mail return-receipt  
Notice list set forth on Exhibit  
"C" of application

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

**RECEIVED**

JUN 18 1991

OIL CONSERVATION DIV.  
SANTA FE

IN THE MATTER OF THE APPLICATION  
OF WARRIOR, INC. FOR APPROVAL OF A  
LEASEHOLD PILOT WATERFLOOD PROJECT,  
LEA COUNTY, NEW MEXICO

NO. 10347

A P P L I C A T I O N

COMES NOW WARRIOR, INC., by and through its attorneys, and applies to the New Mexico Oil Conservation Division for authority to institute a leasehold waterflood project on a portion of its Federal "D" Lease consisting of approximately 480 acres, more or less, and comprising the W/2 of Section 26 and the NE/4 of Section 27, T20S, R36E, Lea County, New Mexico by the injection of water into the Eumont Oil & Gas Pool (Yates-Seven Rivers-Queen), through the perforated interval from approximately 3804 feet to 3964 feet in its Federal "D" Well No. 2 located 1980 feet FNL and 660 feet FWL of Section 26.

In support thereof would show:

1. Warrior, Inc. is the current operator of the Federal "D" Lease located in the N/2 of Section 27 and

W/2 of Section 26, T20S, R36E, Lea County, New Mexico, part of which will be designated for this waterflood project as shown on Exhibit "A."

2. Warrior Inc. currently operates the Federal "D" Lease in which development began in 1954 in the Eumont Pool.

3. There is remaining secondary oil potential from the formation in the pool under the Federal "D" Lease which may not be recovered in the absence of waterflood operations.

4. The waterflood pilot project plan of operations includes initial development and testing with one injection well and five oil producing wells.

5. Warrior, Inc. requests an administrative procedure be established for the waterflood project area to allow for the amendment of the location of either injection or producing wells in the event such changes in location are deemed necessary by the operator.

6. Warrior, Inc. requests that the waterflood be designated the Warrior Federal "D" Lease Waterflood Project.

7. Enclosed with this application as Exhibit "B" is the completed Division Form C-108 with attachments for this project.

8. In accordance with Division notice requirements, copies of the application has been sent to those parties listed on Exhibit "C" notifying them that the applicant requests that this matter be set for hearing on the Division Examiner docket now set for July 11, 1991.

WHEREFORE, Warrior, Inc. requests that this matter be set on the Division Examiner docket and that after hearing the application be approved as requested.

Respectfully submitted:

KELLAHIN, KELLAHIN & AUBREY

By: 

W. Thomas Kellahin  
Post Office Box 2265  
Santa Fe, New Mexico 87504  
(505) 982-4285



EXHIBIT "B"

*Case 10347*

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: WARRIOR INC.  
Address: P. O. Box 5970 Hobbs, New Mexico 88241  
Contact party: M. Y. (Merch) Merchant Phone: (505) 397-3596
- 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 \_\_\_\_\_.
- 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: M. Y. Merchant Title Consulting Petroleum Engr.  
Signature: *M. Y. Merchant* Date: June 6, 1991
- \* 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.  
\_\_\_\_\_

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

## III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
  - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
  - (3) A description of the tubing to be used including its size, lining material, and setting depth.
  - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
- (1) The name of the injection formation and, if applicable, the field or pool name.
  - (2) The injection interval and whether it is perforated or open-hole.
  - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
  - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
  - (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, Kathi Bearden

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 \_\_\_\_\_

One weeks.  
Beginning with the issue dated

June 3, 1991  
and ending with the issue dated

June 3, 1991

*Kathi Bearden*  
General Manager

Sworn and subscribed to before

me this 6th day of

June, 1991

*K. B. Parker*  
Notary Public.

My Commission expires \_\_\_\_\_

July 26, 1991  
Lea, New Mexico

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

LEGAL NOTICE

June 3, 1991

Warrior, Inc., P.O. Box 5970, Hobbs, New Mexico 88241, is filing an application to convert Federal "D" Well No. 2 to water injection for a lease waterflood project. This well is located 1980' from the North line and 660' from the West line, Section 26, T-20-S, R-36-E, Lea County, New Mexico.

The intention of applicant is to inject produced water of the same lease into the Eurmont zone at an average rate of 200 BWPD at pressures ranging from 0-750 psig.

All interested parties must file objections, if any, or request a hearing with Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days of this notice. M.Y. Merch Merchant (505) 397-3596.

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #2

Type: Producing Oil Well  
Original Operator: Amerada Petroleum Corp.  
Date Drilled: August, 1954

Location: 1980' from N. Line and 660' from West Line, Section 26,  
T205, R36E, Lea County, New Mexico  
Depth: 3990'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	317'	300 Sacks	(Cemented Circulated)
	7"	23#	3990'	800 Sacks	(Cement Top @ 1457')

Perforations: 3804 - 3898  
3910 - 3964

Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. oil and 22,500 # sand

WARRIOR INC.

FEDERAL D.#2

PART VIII: The proposed injection zone is Eumont and lithology is sandy dolomite. The top of the Eumont is 3670' and injection zone is 3804-3964' . The only fresh water in the area is the Ogallala at 150-250' from surface. There is no fresh water zones below the injection zone.

PART IX: There are no plans to acidize the injection zone at this time.

PART X : Should be on NMOCD file.

PART XI : A fresh water well exist east of the proposed injection well. A water analysis from the same well is attached.

HALLIBURTON SERVICES  
MIDLAND DIVISION  
HOBBS, NEW MEXICO 88240

XI = C-108

To Warrior Inc.

Sample Number 218  
\*Milligrams per liter

Submitted by Mr. Merchant Date Received 06-05-91

Well No. see below Depth \_\_\_\_\_ Formation \_\_\_\_\_

County Lea Field Monument Source Water Well

Resistivity....	5.0 @ 74°F		
Specific Gr....	0.985		
pH.....	8.4		
Calcium*.....	800		
Ca			
Magnesium*....	nil		
Mg			
Chlorides*....	650		
Cl			
Sulfates* .....	525		
SO <sub>4</sub>			
Bicarbonates*..	763		
HCO <sub>3</sub>			
Soluble Iron*..	nil		
Fe			

Sample from well west of Tuffy Coopers House

Remarks:

\*Milligrams per liter

John Eubank  
Respectfully submitted,

Analyst: \_\_\_\_\_

HALLIBURTON COMPANY

cc:

By \_\_\_\_\_  
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE

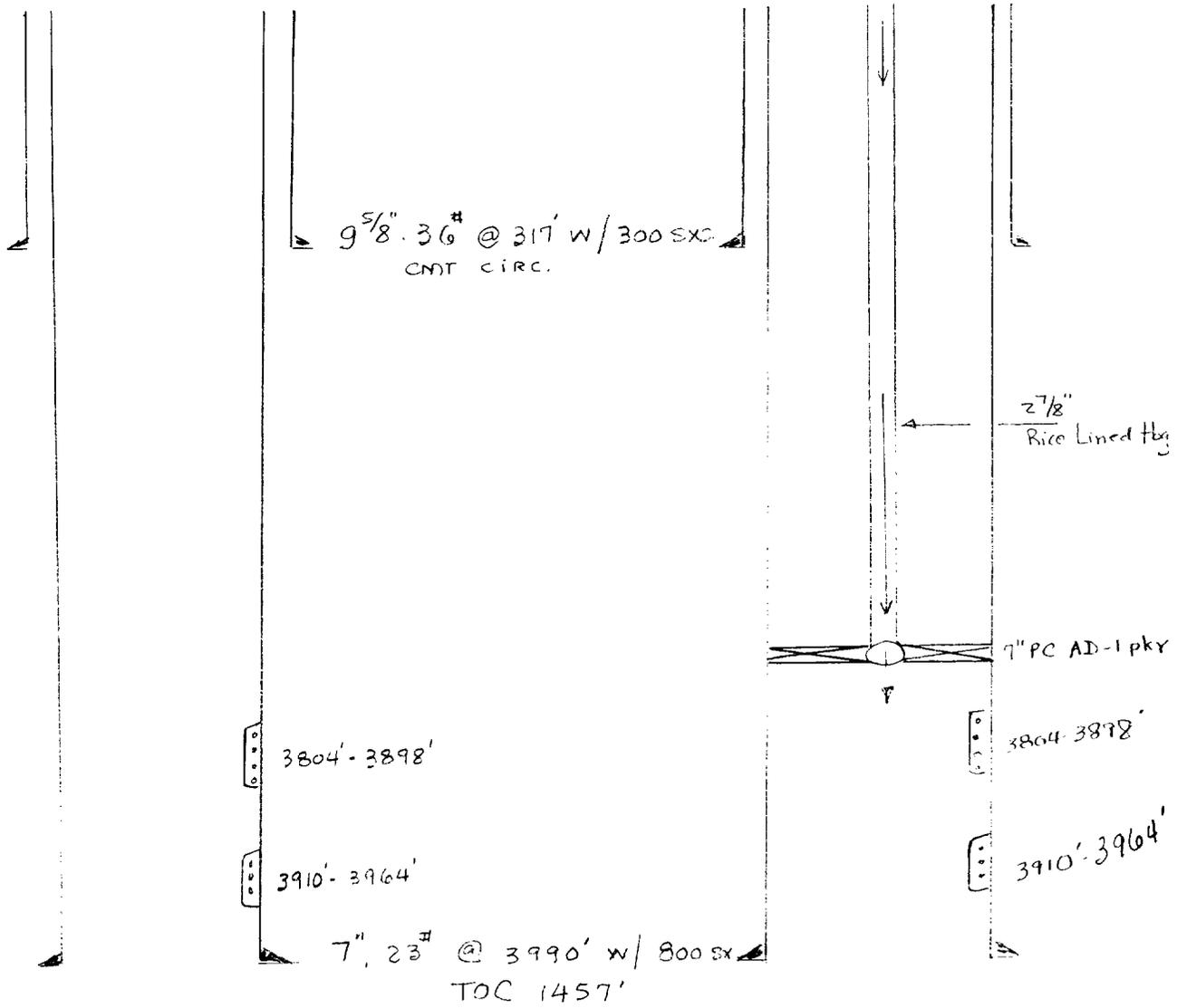
WARRIOR INC.

FEDERAL "D" NO. 2

PART XII

WARRIOR INC. has examined available geologic and engineering data, and finds no evidence of open faults or any other hydrologic connection between the injection zone and any source of drinking water.

FEDERAL "D" No. 2



WARRIOR INC.

FEDERAL D WELL NO. 2

PART III. DATA ON PORPOSED OPERATION:

1. Average injection rate is estimated at 200 bwpd, and maximum injection should not exceed 200 bpd.
2. This will be a closed system.
3. Average injection pressure is estimated to be vacuum, and maximum is estimated to be 750 psig.
4. Not applicable.
5. Not applicable.

WARRION INC.

FEDERAL "D" NO. 2

CHEVRON USA INC.

Eunice Monument South Unit B (formerly Conoco Reed B #9)

Unit Letter M, Section 23, T205, R36E

Drilled to 3977'; 8 5/8" 28# @ 1437' w/650 sxs.

5 1/2" 14# @ 3971' w/1413 sxs.

Perf.: 3870' - 3920'

Fed. form filed 3/5/91 to convert well to injection by

NMOCD order # R7766A.

- 1) YARBROUGH OIL  
Elliott State No. 1 Unit Letter P  
330' FEL, 990' FSL  
Section 27, T205, R36E  
Lea County, New Mexico
  
- 2) 8 5/8" 24# @ 319' TOC Surface  
5 1/2" 155# @ 4080' w/800 sxs.  
Perf.: 3964' - 84'; 3998' - 4005'  
C-103 filed in '81 to set plug @ 3900'  
Perf. 3624' - 3684'. No follow-up in OCD Hobbs office

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: State WE "D" #1

Original Operator: Amerada Petroleum Corp.

Current Operator: Warriors Inc.

Date Drilled: Jan., 1954

Location: 1980' from South Line and 660' from East Line, Section 27,  
T205, R36E, Lea County, New Mexico

Depth: 7201'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	13 3/8"		291'	300 sx	(Cement Circulated)
	8 5/8"		2990'	1500 sx	(Cement Circulated)
	5 1/2"		7189'	1150 sx	(Top Cement @ 2000 ft.)

Perforations: 3930 - 4005  
4025 - 4085  
4125 - 4170

Stimulation: 1,000 gal. Acid  
Frac w/10,000 # sand, set CIBP @ 4110'  
4/60 set CIBP @ 3605'  
Perf. 3460 - 92  
3530 - 3542  
Stim. 1,000 gal. Acid  
Frac 25,000 gal. + 64,000 # sand  
"Not Successful"

[Temp. Abdon. 10/27/60]

Feb, 1973 - Ran Rods, Tubing and Pump and put on production.

Well is currently TA'd

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #1  
 Type: Producing  
 Original Operator: Amerada Petroleum Corp.  
 Current Operator: Warrior Inc.  
 Date Drilled: July, 1954  
 Location: 660' from West Line and 1980' from South Line, Section 26,  
 T205, R36E, Lea County, New Mexico  
 Depth: 4145'  
 PBSD

Completion Record:	Size	Wt.	Depth.	Cement	Comments
Casing:	9 5/8"	36#	337'	300 sacks	
	7"	23#	4145'	800 sacks	(Top Cement @ 2433')

Perforations: 4027 -4063  
 Stimulation: 500 gal. Acid  
 Frac w/6,000 # sand, swab test 1 BW/hr. + 6 BW/hr.  
 sqz. w/100 sacks

Perforations: 3826 - 3910  
 3922 - 3975  
 Stimulation: 1,000 gal. Acid  
 Frac w/6,000 gal. oil and 6,000 # sand

Perforations: 3605 - 3625  
 3673 - 3714  
 Stimulation: 1,000 gal. Acid  
 Frac w/6,000 gal. + 6,000 # sand, swab 1 BW/hr. + 6 BW/hr.  
 sqz. w/75 sx.

Perforations: 3324 - 70  
 3380 - 3428  
 Stimulation: 1,000 gal. Acid  
 Frac w/6,000 gal. oil + 6,000 # sand, swab test 1 BW/hr.  
 sqz. w/755 sx.

Drill out plugs to open 3826 - 3910, 3922 - 3975  
 PBSD 3974

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #3  
 Type: Producing  
 Original Operator: Amerada Petroleum Corp.  
 Current Operator: Warrior Inc.  
 Date Drilled: Sept, 1954  
 Location: 1980 from North Line and 660 from East Line of Section 27,  
 T205, R36E, Lea County, New Mexico

## Depth:

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	305'	300 sx	
	7"	23#	4075'	800 sx	(Top Cement @ 2351')

Perforations: 4012 - 4060  
 Stimulation: 1,000 gal. Acid  
 Frac w/7,000 gal. + 7,000 gal. # sand  
 Swab 5 BO/hr. + 5 Bw/hr.  
 Set CIBP @ 4,006'

Perforations: 3912 - 4000  
 Stimulation: 1,000 gal. Acid  
 Frac w/20,000 gal. + 20,000 # sand  
 Nov., 1956-Drilled out plug @ 4006'

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #4

Type: Currently producing

Original Operator: Amerada Petroleum Corp.  
Current Operator: Warrior Inc.

Date Drilled: Oct., 1954

Location: 660' from West Line and 660' from North Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3980'  
PBSD 3973'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	328'	300 sx	
	7"	23#	3980'	800 sx	(Top Cement @ 2334')

Perforations: 3989 - 3947  
Stimulation: 500 gal. Acid  
Frac w/20,000 gal. + 22,500 # sand  
Flowing well \_- Currently pumping

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #5

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Jan., 1955

Location: 660' from West Line and 660' from South Line, Section 26,  
T205, R36E, Lea County, New MexicoDepth: 3955'  
PBSD 3950'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"		317'	400 sx	(Circulated)
	7"	23#	3955'	800 sx	(Top Cement 2211 -28)

Perforations: 3848 - 3940

Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. + 20,000 # sandPerforations: 3360 - 3410 -Gas  
3440 - 3460 -GasStimulation: Frac w/ 20,000 gal. + 20,000 # sand  
11/57- Frac w/40,000 gal. + 40,000 # sand  
Zone started making oil in May 1958  
7/60- Pulled Dual Packer

Currently, well is TA'd

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #6

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Feb., 1955

Location: 1980' from West Line and 660' from South Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3960'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"		308'	250 sx	(Cement Circulated)
	7"	23#	3960'	800 sx	(Cement Top @ 1513')
	D.V. Collar		1998'	500 sx	(Did not Circulate)

Perforations: 3746 - 3808  
3826 - 3888Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. + 20,000 # sand  
6/67 Acid w/1,000 gal.

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #7

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: March, 1955

Location: 1980 from South Line and 1980 from West Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3895' (original)

Completion Record:	Size	Wt.	Depth	Cement	Comments
Casing:	8 5/8"		302'	200 sx	(Circulated)
	5 1/2"	15.5#	3705'	800 sx	1356'
	D.V. Collar			600 sx	
	@ 1915'				
Perforations:	3705 - 3895 -open hole				
Stimulation:	Frac w/ 20,000 gal. + 20,000 # sand				
	3/80- set sqz. w/350 sx., deepened to 4520				
	set 4" liner 4520 - 3602, cemented w/355 sx				
Perforations:	4262 - 66				
	4284 - 92				
	4299 - 4305				
	4329 - 36				
	4444 - 46				
	4448 - 58				
	4470 - 76				
Stimulation:	4300 gal. Acid + N <sub>2</sub> , tested water and <u>no gas</u>				
	3/1984 set BP @ 4210'				
Perforations:	4106 - 4118				
Stimulation:	Acid w/2,800 gal., tested 3 BO + 20 BW + 20 MCF				
	10/85- Frac w/ 12,000 gal. + 15,000 # sand				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #8

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: March, 1955

Location: 1980 from North Line and 1980 from West Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3940'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"	32#	1403'	1,000 sx	(Circulated)
	5 1/2"	15.5#	3896'	800 sx	(Cement Top @1181')
Perforations:	3896 - 3940- open hole				
Stimulation:	Acid 1,000 gal				
	Frac w/25,000 gal. + 25,000 # sand				
Perforations:	2/56- 3200 - 3210- gas zone				
	3220 - 3244- gas zone				
Stimulation:	Acid 500 gal.				
	Frac w/10,000 gal. + 10,000 # sand				
Perforations:	4/67- 1 hole @ 3726				
	3742				
	3751				
	3760				
	3794				
	3826				
	3841				
Stimulation:	500 gal. Acid				
	Frac w/30,000 gal. + 30,000 # sand				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #9

Type: Producer

Original Operator: Amerada Petroleum Corp.  
Current Operator: Warrior Inc.

Date Drilled: April, 1955

Location: 1980 from West Line and 660 from North Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3910'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"	32#	1385'	900 sx	(Circulated)
	5 1/2"	15.5#	3870'	800 sx	(Circulated)
Perforations:	3870 - 3910- open hole				
Stimulation:	Acid 1,000 gal. Frac w/25,000 gal. + 25,000 # sand				
Perforations:	5/66- 1 hole @ 3728				
	3739				
	3757				
	3777				
	3795				
	3806				
	3813				
	3821				
Stimulation:	Acid 1,000 gal. Frac w/25,000 gal. + 10,000 # sand				

## WARRIOR INC.

Well Name: Federal D #12

Type: Producing

Original &  
Current Oper. Warrior Inc.

Dated Drilled: December, 1977

Location: 990' from the North Line & 330' from the East line  
Section 27, T-20-S, R-36-E, Lea County, New Mexico

Depth: 4122'

Completion  
Record: 8 5/8" csg. 28#, H-40 set at 334' with 250 sxs. Circ. 50 sxs.  
4 1/2" csg. 10.5#, J-55 set at 4122' with 1150 sxs. circ.  
125 sxs.

Perforations: 3180-3641' , 3950-4067'

Stimulation: Acidized w/6000 gal. of FE acid and 160,000 SCF of Nitrogen

NAME AND ADDRESS OF SURFACE OWNER AND OFF-SET OPERATORS:

SURFACE OWNER: MR. DALE (TUFFY) COOPER  
Monument, New Mexico 88265

OFF-SET OPERATORS:

- 1) YARBROUGH OIL  
P. O. Box 1001  
Eunice, New Mexico 88231
- 2) ZIA ENERGY, INC.  
Box 2219  
Hobbs, New Mexico 88240
- 3) E. L. HEGWER  
Box 1637  
Hobbs, New Mexico 88240
- 4) EXXON USA  
Box 1600  
Midland, Texas 79702
- 5) CHEVRON USA  
Box 1150  
Midland, Texas 79705

EXHIBIT "C"

Dale (Tuffy) Cooper  
Monument, New Mexico 88265

Yarbrough Oil  
P.O. Box 1001  
Eunice, NM 88231

Zia Energy, Inc.  
P.O. Box 2219  
Hobbs, NM 88240

E.L. Hegwer  
P.O. Box 1637  
Hobbs, NM 88240

EXXON USA  
P.O. Box 1600  
Midland, Texas 79702

Chevron U.S.A.  
P.O. Box 1150  
Midland, TX 79705

Bureau of Land Management  
P.O. Box 1778  
Carlsbad, NM 88220

Oil Conservation Division  
P.O. Box 1980  
Hobbs, NM 88240  
Attn: Mr. Jerry Sexton

**KELLAHIN, KELLAHIN AND AUBREY**

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

TELEPHONE (505) 982-4285

TELEFAX (505) 982-2047

W. THOMAS KELLAHIN  
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN  
OF COUNSEL

June 18, 1991

Mr. William J. LeMay  
Oil Conservation Division  
Post Office Box 2088  
Santa Fe, New Mexico 87504

**RECEIVED**

JUN 18 1991

OIL CONSERVATION DIV.  
SANTA FE

Re: Application of Warrior, Inc. for  
a Leasehold Pilot Waterflood  
Project, Including Authority for  
Expansion, Lea County, New Mexico

10347

Dear Mr. LeMay:

On behalf of Warrior, Inc., please find enclosed our application and accompanying Division Form C-108 seeking authority to institute a waterflood operation on its Federal "D" Lease in the Eumont Gas (Yates-Seven Rivers-Queen) Pool, Lea County, New Mexico.

We suggest the following as an advertisement for the notice of hearing provided for the New Mexico Oil Conservation Division docket:

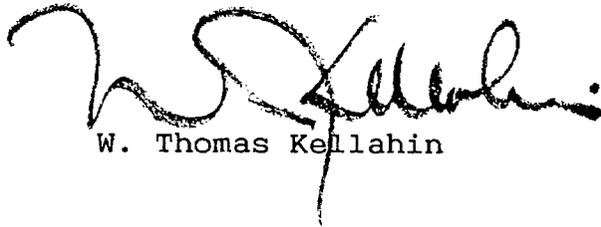
Application of Warrior, Inc. for a pilot waterflood project, Lea County, New Mexico. Applicant in the above-styled cause seeks authority to institute a one well pilot waterflood project on a portion of its Federal "D" Lease underlying the W/2 of Section 26 and the NE/4 of Section 27, Township 20 South, Range 36 East, N.M.P.M., by the injection of water into the Eumont Oil & Gas Pool, through the perforated interval from approximately 3804 feet to 3964 feet in its Federal "D" Well No. 2, located 1980 feet FNL and 660 feet FWL of Section 26. Applicant further seeks an administrative procedure for the expansion of the leasehold waterflood project by the drilling of new injection wells or the conversion of producers to

Mr. William J. LeMay  
June 18, 1991  
Page 2

injection within the leasehold. Said project area is located approximately \_\_\_\_\_ miles \_\_\_\_\_ of \_\_\_\_\_, New Mexico.

By copy of this letter and application, sent certified mail, we are notifying all interested parties of their right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application.

Very truly yours,



W. Thomas Kellahin

WTK/tic  
Enclosure

cc: Mr. M.Y. Merchant  
Unique Engineering  
Post Office Box 5970  
Hobbs, New Mexico 88241

Certified mail return-receipt  
Notice list set forth on Exhibit  
"C" of application

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

RECEIVED

JUN 18 1991

OIL CONSERVATION DIV.  
SANTA FE

NO. 10347

IN THE MATTER OF THE APPLICATION  
OF WARRIOR, INC. FOR APPROVAL OF A  
LEASEHOLD PILOT WATERFLOOD PROJECT,  
LEA COUNTY, NEW MEXICO

A P P L I C A T I O N

COMES NOW WARRIOR, INC., by and through its attorneys, and applies to the New Mexico Oil Conservation Division for authority to institute a leasehold waterflood project on a portion of its Federal "D" Lease consisting of approximately 480 acres, more or less, and comprising the W/2 of Section 26 and the NE/4 of Section 27, T20S, R36E, Lea County, New Mexico by the injection of water into the Eumont Oil & Gas Pool (Yates-Seven Rivers-Queen), through the perforated interval from approximately 3804 feet to 3964 feet in its Federal "D" Well No. 2 located 1980 feet FNL and 660 feet FWL of Section 26.

In support thereof would show:

1. Warrior, Inc. is the current operator of the Federal "D" Lease located in the N/2 of Section 27 and

W/2 of Section 26, T20S, R36E, Lea County, New Mexico, part of which will be designated for this waterflood project as shown on Exhibit "A."

2. Warrior Inc. currently operates the Federal "D" Lease in which development began in 1954 in the Eumont Pool.

3. There is remaining secondary oil potential from the formation in the pool under the Federal "D" Lease which may not be recovered in the absence of waterflood operations.

4. The waterflood pilot project plan of operations includes initial development and testing with one injection well and five oil producing wells.

5. Warrior, Inc. requests an administrative procedure be established for the waterflood project area to allow for the amendment of the location of either injection or producing wells in the event such changes in location are deemed necessary by the operator.

6. Warrior, Inc. requests that the waterflood be designated the Warrior Federal "D" Lease Waterflood Project.

7. Enclosed with this application as Exhibit "B" is the completed Division Form C-108 with attachments for this project.

8. In accordance with Division notice requirements, copies of the application has been sent to those parties listed on Exhibit "C" notifying them that the applicant requests that this matter be set for hearing on the Division Examiner docket now set for July 11, 1991.

WHEREFORE, Warrior, Inc. requests that this matter be set on the Division Examiner docket and that after hearing the application be approved as requested.

Respectfully submitted:

KELLAHIN, KELLAHIN & AUBREY

By: 

W. Thomas Kellahin  
Post Office Box 2265  
Santa Fe, New Mexico 87504  
(505) 982-4285



EXHIBIT "B"

## APPLICATION FOR AUTHORIZATION TO INJECT

Case 10347

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: WARRIOR INC.  
Address: P. O. Box 5970 Hobbs, New Mexico 88241  
Contact party: M. Y. (Merch) Merchant Phone: (505) 397-3596
- 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 \_\_\_\_\_.
- 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: M. Y. Merchant Title Consulting Petroleum Engr.  
Signature: *M. Y. Merchant* Date: June 6, 1991
- \* 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.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

## III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

---

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, Kathi Bearden

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 \_\_\_\_\_

One weeks.  
Beginning with the issue dated

June 3, 1991  
and ending with the issue dated

June 3, 1991

*Kathi Bearden*  
General Manager

Sworn and subscribed to before

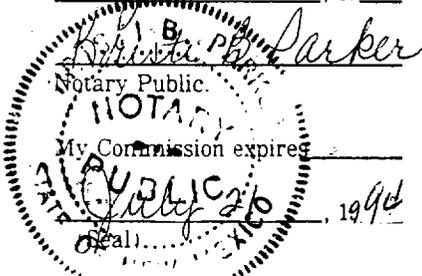
me this 6th day of

June, 1991

*B. Parker*  
Notary Public.

My Commission expires

July 26, 1994



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

LEGAL NOTICE

June 3, 1991

Warrior, Inc., P.O. Box 5970, Hobbs, New Mexico 88241, is filing an application to convert Federal "D" Well No. 2 to water injection for a lease waterflood project. This well is located 1980' from the North line and 660' from the West line, Section 26, T-20-S, R-34-E, Lea County, New Mexico.

The intention of applicant is to inject produced water of the same lease into the Eumont zone at an average rate of 200 BWPD at pressures ranging from 0-750 psig.

All interested parties must file objections, if any, or request a hearing with Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days of this notice. M.Y. Merch Merchant (505) 397-3596.

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #2

Type: Producing Oil Well  
Original Operator: Amerada Petroleum Corp.  
Date Drilled: August, 1954

Location: 1980' from N. Line and 660' from West Line, Section 26,  
T205, R36E, Lea County, New Mexico  
Depth: 3990'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	317'	300 Sacks	(Cemented Circulated)
	7"	23#	3990'	800 Sacks	(Cement Top @ 1457')

Perforations: 3804 - 3898  
3910 - 3964

Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. oil and 22,500 # sand

WARRIOR INC.

FEDERAL D.#2

PART VIII: The proposed injection zone is Eumont and lithology is sandy dolomite. The top of the Eumont is 3670' and injection zone is 3804-3964' . The only fresh water in the area is the Ogallala at 150-250' from surface. There is no fresh water zones below the injection zone.

PART IX: There are no plans to acidize the injection zone at this time.

PART X : Should be on NMOCD file.

PART XI : A fresh water well exist east of the proposed injection well. A water analysis from the same well is attached.

XI = C-108

To Warrior Inc.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sample Number 218  
\*Milligrams per liter

Submitted by Mr. Merchant Date Received 06-05-91

Well No. see below Depth \_\_\_\_\_ Formation \_\_\_\_\_

County Lea Field Monument Source Water Well

Resistivity....	5.0 @ 74°F		
Specific Gr....	0.985		
pH.....	8.4		
Calcium*.....	800		
Ca			
Magnesium*.....	nil		
Mg			
Chlorides*.....	650		
Cl			
Sulfates* .....	525		
SO <sub>4</sub>			
Bicarbonates*..	763		
HCO <sub>3</sub>			
Soluble Iron*..	nil		
Fe			

Sample from well west of Tuffy Coopers House

Remarks: \_\_\_\_\_ \*Milligrams per liter

John Eubank  
Respectfully submitted,

Analyst: \_\_\_\_\_

HALLIBURTON COMPANY

cc: \_\_\_\_\_  
By \_\_\_\_\_  
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

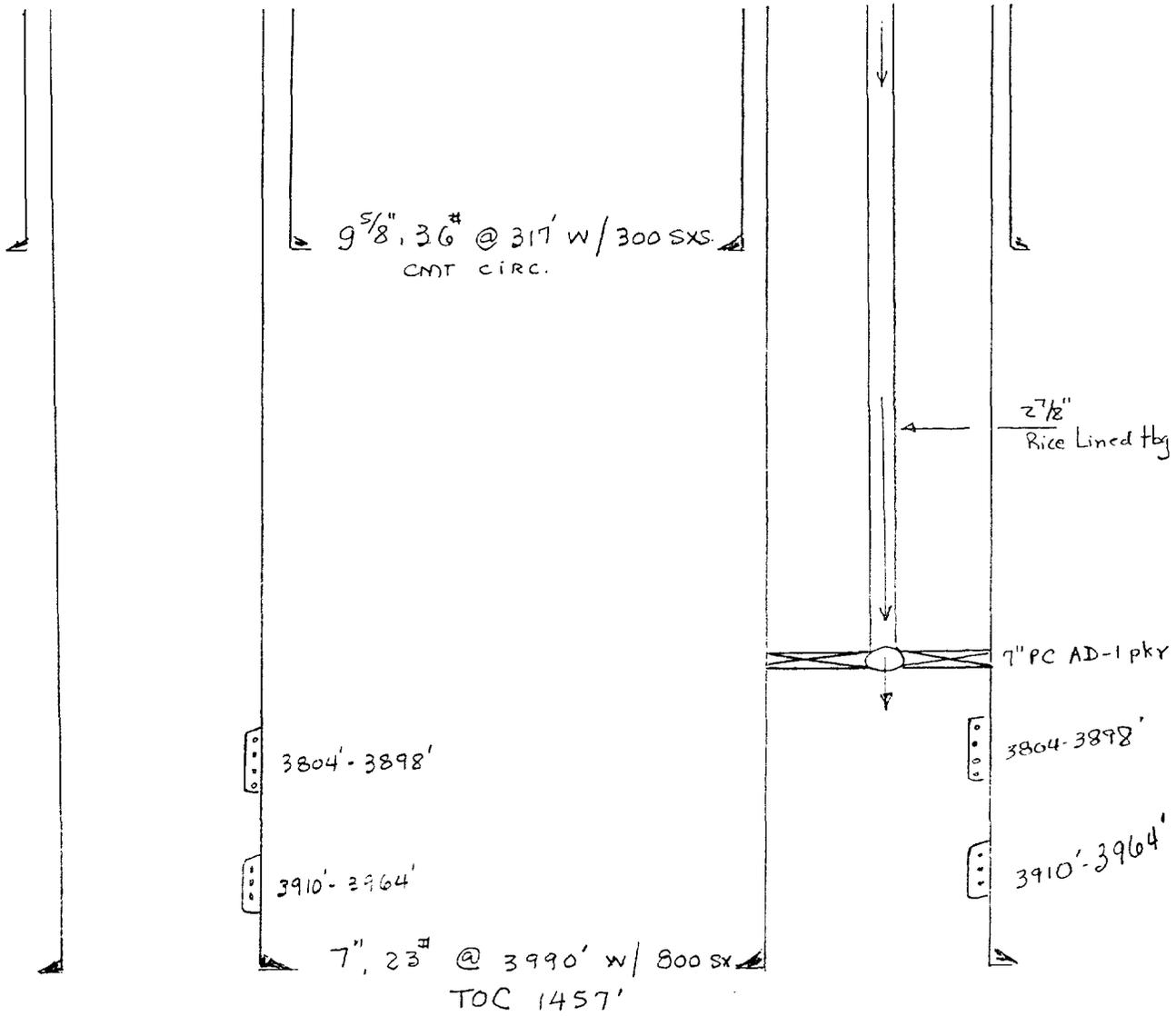
WARRIOR INC.

FEDERAL "D" NO. 2

PART XII

WARRIOR INC. has examined available geologic and engineering data, and finds no evidence of open faults or any other hydrologic connection between the injection zone and any source of drinking water.

FEDERAL "D" No. 2



WARRIOR INC.

FEDERAL D WELL NO. 2

PART III. DATA ON PORPOSED OPERATION:

1. Average injection rate is estimated at 200 bwpd, and maximum injection should not exceed 200 bpd.
2. This will be a closed system.
3. Average injection pressure is estimated to be vacuum, and maximum is estimated to be 750 psig.
4. Not applicable.
5. Not applicable.

WARRION INC.

FEDERAL "D" NO. 2

CHEVRON USA INC.

Eunice Monument South Unit B (formerly Conoco Reed B #9)

Unit Letter M, Section 23, T205, R36E

Drilled to 3977'; 8 5/8" 28# @ 1437' w/650 sxs.

5 1/2" 14# @ 3971' w/1413 sxs.

Perf.: 3870' - 3920'

Fed. form filed 3/5/91 to convert well to injection by

NMOCD order # R7766A.

WARRIOR INC.

FEDERAL "D" NO. 2

PART VI FORM C-108

- 1) YARBROUGH OIL  
Elliott State No. 1 Unit Letter P  
330' FEL, 990' FSL  
Section 27, T205, R36E  
Lea County, New Mexico
  
- 2) 8 5/8" 24# @ 319' TOC Surface  
5 1/2" 155# @ 4080' w/800 sxs.  
Perf.: 3964' - 84'; 3998' - 4005'  
C-103 filed in '81 to set plug @ 3900'  
Perf. 3624' - 3684'. No follow-up in OCD Hobbs office

## WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: State WE "D" #1

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Jan., 1954

Location: 1980' from South Line and 660' from East Line, Section 27,  
T205, R36E, Lea County, New Mexico

Depth: 7201'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	13 3/8"		291'	300 sx	(Cement Circulated)
	8 5/8"		2990'	1500 sx	(Cement Circulated)
	5 1/2"		7189'	1150 sx	(Top Cement @ 2000 ft.)

Perforations: 3930 - 4005  
4025 - 4085  
4125 - 4170

Stimulation: 1,000 gal. Acid  
Frac w/10,000 # sand, set CIBP @ 4110'  
4/60 set CIBP @ 3605'  
Perf. 3460 - 92  
3530 - 3542  
Stim. 1,000 gal. Acid  
Frac 25,000 gal. + 64,000 # sand  
"Not Successful"

[Temp. Abdon. 10/27/60]

Feb, 1973 - Ran Rods, Tubing and Pump and put on production.

Well is currently TA'd

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #1

Type: Producing

Original Operator: Amerada Petroleum Corp.  
Current Operator: Warrior Inc.

Date Drilled: July, 1954

Location: 660' from West Line and 1980' from South Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 4145'  
PBSD

Completion Record:

	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	337'	300 sacks	
	7"	23#	4145'	800 sacks	(Top Cement @ 2433')

Perforations: 4027 -4063

Stimulation: 500 gal. Acid  
Frac w/6,000 # sand, swab test 1 BW/hr. + 6 BW/hr.  
sqz. w/100 sacks

Perforations: 3826 - 3910  
3922 - 3975

Stimulation: 1,000 gal. Acid  
Frac w/6,000 gal. oil and 6,000 # sand

Perforations: 3605 - 3625  
3673 - 3714

Stimulation: 1,000 gal. Acid  
Frac w/6,000 gal. + 6,000 # sand, swab 1 BW/hr. + 6 BW/hr.  
sqz. w/75 sx.

Perforations: 3324 - 70  
3380 - 3428

Stimulation: 1,000 gal. Acid  
Frac w/6,000 gal. oil + 6,000 # sand, swab test 1 BW/hr.  
sqz. w/755 sx.

Drill out plugs to open 3826 - 3910, 3922 - 3975  
PBSD 3974

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #3  
 Type: Producing  
 Original Operator: Amerada Petroleum Corp.  
 Current Operator: Warrior Inc.  
 Date Drilled: Sept, 1954  
 Location: 1980 from North Line and 660 from East Line of Section 27,  
 T205, R36E, Lea County, New Mexico  
 Depth:

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	305'	300 sx	
	7"	23#	4075'	800 sx	(Top Cement @ 2351')
Perforations:	4012 - 4060				
Stimulation:	1,000 gal. Acid				
	Frac w/7,000 gal. + 7,000 gal. # sand				
	Swab 5 BO/hr. + 5 Bw/hr.				
	Set CIBP @ 4,006'				
Perforations:	3912 - 4000				
Stimulation:	1,000 gal. Acid				
	Frac w/20,000 gal. + 20,000 # sand				
	Nov., 1956-Drilled out plug @ 4006'				

## WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #4

Type: Currently producing

Original Operator: Amerada Petroleum Corp.  
Current Operator: Warrior Inc.

Date Drilled: Oct., 1954

Location: 660' from West Line and 660' from North Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3980'  
PBSD 3973'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	328'	300 sx	
	7"	23#	3980'	800 sx	(Top Cement @ 2334')
Perforations:	3989 - 3947				
Stimulation:	500 gal. Acid				
	Frac w/20,000 gal. + 22,500 # sand				
	Flowing well - Currently pumping				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #5

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Jan., 1955

Location: 660' from West Line and 660' from South Line, Section 26,  
T205, R36E, Lea County, New MexicoDepth: 3955'  
PBTD 3950'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"		317'	400 sx	(Circulated)
	7"	23#	3955'	800 sx	(Top Cement 2211 -28)

Perforations: 3848 - 3940

Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. + 20,000 # sandPerforations: 3360 - 3410 -Gas  
3440 - 3460 -GasStimulation: Frac w/ 20,000 gal. + 20,000 # sand  
11/57- Frac w/40,000 gal. + 40,000 # sand  
Zone started making oil in May 1958  
7/60- Pulled Dual Packer

Currently, well is TA'd

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #6

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Feb., 1955

Location: 1980' from West Line and 660' from South Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3960'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"		308'	250 sx	(Cement Circulated)
	7"	23#	3960'	800 sx	(Cement Top @ 1513')
	D.V. Collar		1998'	500 sx	(Did not Circulate)
Perforations:	3746 - 3808				
	3826 - 3888				
Stimulation:	1,000 gal. Acid				
	Frac w/20,000 gal. + 20,000 # sand				
	6/67 Acid w/1,000 gal.				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #7

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: March, 1955

Location: 1980 from South Line and 1980 from West Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3895' (original)

Completion Record:	Size	Wt.	Depth	Cement	Comments
Casing:	8 5/8"		302'	200 sx	(Circulated)
	5 1/2"	15.5#	3705'	800 sx	1356'
	D.V. Collar			600 sx	
	@ 1915'				
Perforations:	3705 - 3895 -open hole				
Stimulation:	Frac w/ 20,000 gal. + 20,000 # sand				
	3/80- set sqz. w/350 sx., deepened to 4520				
	set 4" liner 4520 - 3602, cemented w/355 sx				
Perforations:	4262 - 66				
	4284 - 92				
	4299 - 4305				
	4329 - 36				
	4444 - 46				
	4448 - 58				
	4470 - 76				
Stimulation:	4300 gal. Acid + N <sub>2</sub> , tested water and <u>no gas</u>				
	3/1984 set BP @ 4210'				
Perforations:	4106 - 4118				
Stimulation:	Acid w/2,800 gal., tested 3 BO + 20 BW + 20 MCF				
	10/85- Frac w/ 12,000 gal. + 15,000 # sand				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #8

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: March, 1955

Location: 1980 from North Line and 1980 from West Line, Section 26, T205, R36E, Lea County, New Mexico

Depth: 3940'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"	32#	1403'	1,000 sx	(Circulated)
	5 1/2"	15.5#	3896'	800 sx	(Cement Top @1181')
Perforations:	3896 - 3940- open hole				
Stimulation:	Acid 1,000 gal Frac w/25,000 gal. + 25,000 # sand				
Perforations:	2/56- 3200 - 3210- gas zone 3220 - 3244- gas zone				
Stimulation:	Acid 500 gal. Frac w/10,000 gal. + 10,000 # sand				
Perforations:	4/67- 1 hole @ 3726 3742 3751 3760 3794 3826 3841				
Stimulation:	500 gal. Acid Frac w/30,000 gal. + 30,000 # sand				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #9  
 Type: Producer  
 Original Operator: Amerada Petroleum Corp.  
 Current Operator: Warrior Inc.  
 Date Drilled: April, 1955  
 Location: 1980 from West Line and 660 from North Line, Section 26,  
 T205, R36E, Lea County, New Mexico  
 Depth: 3910'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"	32#	1385'	900 sx	(Circulated)
	5 1/2"	15.5#	3870'	800 sx	(Circulated)
Perforations:	3870 - 3910- open hole				
Stimulation:	Acid 1,000 gal. Frac w/25,000 gal. + 25,000 # sand				
Perforations:	5/66- 1 hole @ 3728				
	3739				
	3757				
	3777				
	3795				
	3806				
	3813				
	3821				
Stimulation:	Acid 1,000 gal. Frac w/25,000 gal. + 10,000 # sand				

## WARRIOR INC.

Well Name: Federal D #12

Type: Producing

Original &  
Current Oper. Warrior Inc.

Dated Drilled: December, 1977

Location: 990' from the North Line & 330' from the East line  
Section 27, T-20-S, R-36-E, Lea County, New Mexico

Depth: 4122'

Completion  
Record: 8 5/8" csg. 28#, H-40 set at 334' with 250 sxs. Circ. 50 sxs.  
4 1/2" csg. 10.5#, J-55 set at 4122' with 1150 sxs. circ.  
125 sxs.

Perforations: 3180-3641' , 3950-4067'

Stimulation: Acidized w/6000 gal. of FE acid and 160,000 SCF of Nitrogen

NAME AND ADDRESS OF SURFACE OWNER AND OFF-SET OPERATORS:

SURFACE OWNER: MR. DALE (TUFFY) COOPER  
Monument, New Mexico 88265

OFF-SET OPERATORS:

- 1) YARBROUGH OIL  
P. O. Box 1001  
Eunice, New Mexico 88231
- 2) ZIA ENERGY, INC.  
Box 2219  
Hobbs, New Mexico 88240
- 3) E. L. HEGWER  
Box 1637  
Hobbs, New Mexico 88240
- 4) EXXON USA  
Box 1600  
Midland, Texas 79702
- 5) CHEVRON USA  
Box 1150  
Midland, Texas 79705

EXHIBIT "C"

Dale (Tuffy) Cooper  
Monument, New Mexico 88265

Yarbrough Oil  
P.O. Box 1001  
Eunice, NM 88231

Zia Energy, Inc.  
P.O. Box 2219  
Hobbs, NM 88240

E.L. Hegwer  
P.O. Box 1637  
Hobbs, NM 88240

EXXON USA  
P.O. Box 1600  
Midland, Texas 79702

Chevron U.S.A.  
P.O. Box 1150  
Midland, TX 79705

Bureau of Land Management  
P.O. Box 1778  
Carlsbad, NM 88220

Oil Conservation Division  
P.O. Box 1980  
Hobbs, NM 88240  
Attn: Mr. Jerry Sexton

KELLAHIN, KELLAHIN AND AUBREY

ATTORNEYS AT LAW  
EL PATIO BUILDING  
117 NORTH GUADALUPE  
POST OFFICE BOX 2265

TELEPHONE (505) 982-4285  
TELEFAX (505) 982-2047

W. THOMAS KELLAHIN  
KAREN AUBREY

CANDACE HAMANN CALLAHAN

SANTA FE, NEW MEXICO 87504-2265

JASON KELLAHIN  
OF COUNSEL

June 18, 1991

Mr. William J. LeMay  
Oil Conservation Division  
Post Office Box 2088  
Santa Fe, New Mexico 87504

**RECEIVED**

JUN 18 1991

OIL CONSERVATION DIV.  
SANTA FE

Re: Application of Warrior, Inc. for  
a Leasehold Pilot Waterflood  
Project, Including Authority for  
Expansion, Lea County, New Mexico

10347

Dear Mr. LeMay:

On behalf of Warrior, Inc., please find enclosed our application and accompanying Division Form C-108 seeking authority to institute a waterflood operation on its Federal "D" Lease in the Eumont Gas (Yates-Seven Rivers-Queen) Pool, Lea County, New Mexico.

We suggest the following as an advertisement for the notice of hearing provided for the New Mexico Oil Conservation Division docket:

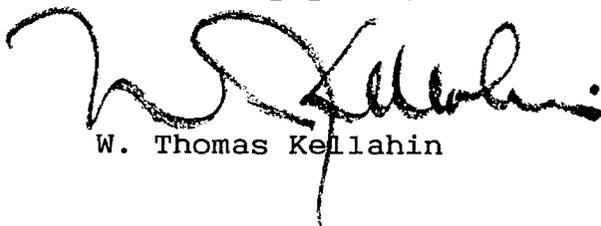
Application of Warrior, Inc. for a pilot waterflood project, Lea County, New Mexico. Applicant in the above-styled cause seeks authority to institute a one well pilot waterflood project on a portion of its Federal "D" Lease underlying the W/2 of Section 26 and the NE/4 of Section 27, Township 20 South, Range 36 East, N.M.P.M., by the injection of water into the Eumont Oil & Gas Pool, through the perforated interval from approximately 3804 feet to 3964 feet in its Federal "D" Well No. 2, located 1980 feet FNL and 660 feet FWL of Section 26. Applicant further seeks an administrative procedure for the expansion of the leasehold waterflood project by the drilling of new injection wells or the conversion of producers to

Mr. William J. LeMay  
June 18, 1991  
Page 2

injection within the leasehold. Said project area is located approximately \_\_\_\_\_ miles \_\_\_\_\_ of \_\_\_\_\_, New Mexico.

By copy of this letter and application, sent certified mail, we are notifying all interested parties of their right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application.

Very truly yours,



W. Thomas Kellahin

WTK/tic  
Enclosure

cc: Mr. M.Y. Merchant  
Unique Engineering  
Post Office Box 5970  
Hobbs, New Mexico 88241

Certified mail return-receipt  
Notice list set forth on Exhibit  
"C" of application

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

**RECEIVED**

JUN 18 1991

OIL CONSERVATION DIV.  
SANTA FE

NO. 10349

IN THE MATTER OF THE APPLICATION  
OF WARRIOR, INC. FOR APPROVAL OF A  
LEASEHOLD PILOT WATERFLOOD PROJECT,  
LEA COUNTY, NEW MEXICO

A P P L I C A T I O N

COMES NOW WARRIOR, INC., by and through its attorneys, and applies to the New Mexico Oil Conservation Division for authority to institute a leasehold waterflood project on a portion of its Federal "D" Lease consisting of approximately 480 acres, more or less, and comprising the W/2 of Section 26 and the NE/4 of Section 27, T20S, R36E, Lea County, New Mexico by the injection of water into the Eumont Oil & Gas Pool (Yates-Seven Rivers-Queen), through the perforated interval from approximately 3804 feet to 3964 feet in its Federal "D" Well No. 2 located 1980 feet FNL and 660 feet FWL of Section 26.

In support thereof would show:

1. Warrior, Inc. is the current operator of the Federal "D" Lease located in the N/2 of Section 27 and

W/2 of Section 26, T20S, R36E, Lea County, New Mexico, part of which will be designated for this waterflood project as shown on Exhibit "A."

2. Warrior Inc. currently operates the Federal "D" Lease in which development began in 1954 in the Eumont Pool.

3. There is remaining secondary oil potential from the formation in the pool under the Federal "D" Lease which may not be recovered in the absence of waterflood operations.

4. The waterflood pilot project plan of operations includes initial development and testing with one injection well and five oil producing wells.

5. Warrior, Inc. requests an administrative procedure be established for the waterflood project area to allow for the amendment of the location of either injection or producing wells in the event such changes in location are deemed necessary by the operator.

6. Warrior, Inc. requests that the waterflood be designated the Warrior Federal "D" Lease Waterflood Project.

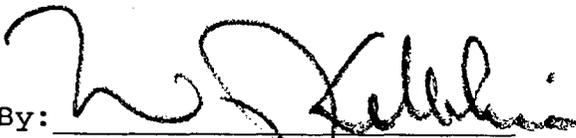
7. Enclosed with this application as Exhibit "B" is the completed Division Form C-108 with attachments for this project.

8. In accordance with Division notice requirements, copies of the application has been sent to those parties listed on Exhibit "C" notifying them that the applicant requests that this matter be set for hearing on the Division Examiner docket now set for July 11, 1991.

WHEREFORE, Warrior, Inc. requests that this matter be set on the Division Examiner docket and that after hearing the application be approved as requested.

Respectfully submitted:

KELLAHIN, KELLAHIN & AUBREY

By: 

W. Thomas Kellahin  
Post Office Box 2265  
Santa Fe, New Mexico 87504  
(505) 982-4285

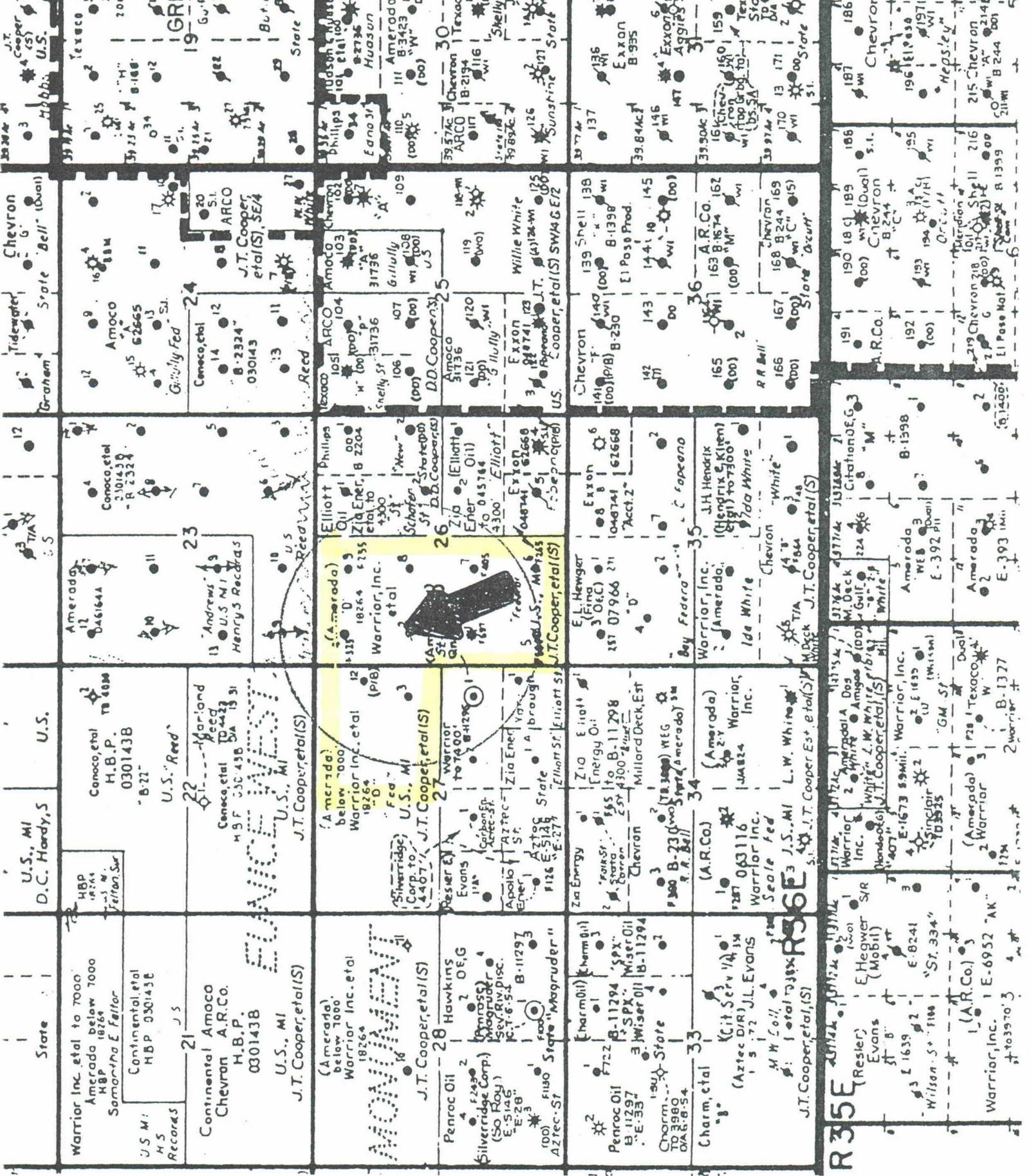


EXHIBIT "A"

EXHIBIT "B"

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: WARRIOR INC.  
Address: P. O. Box 5970 Hobbs, New Mexico 88241  
Contact party: M. Y. (Merch) Merchant Phone: (505) 397-3596
- 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 \_\_\_\_\_.
- 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: M. Y. Merchant Title Consulting Petroleum Engr.  
Signature: *M. Y. Merchant* Date: June 6, 1991
- \* 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.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division

## III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

---

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, Kathi Bearden

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 \_\_\_\_\_

One weeks.  
Beginning with the issue dated

June 3, 1991  
and ending with the issue dated

June 3, 1991

*Kathi Bearden*  
General Manager

Sworn and subscribed to before

me this 6th day of  
June, 1991

*K. B. Parker*  
Notary Public.  
NOTARY PUBLIC  
My Commission expires July 26, 1994  
Lea, N.M.

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

LEGAL NOTICE

June 3, 1991

Warrior, Inc., P.O. Box 5970, Hobbs, New Mexico 88241, is filing an application to convert Federal "D" Well No. 2 to water injection for a lease waterflood project. This well is located 1980' from the North line and 660' from the West line, Section 26, T-20-S, R-36-E, Lea County, New Mexico.

The intention of applicant is to inject produced water of the same lease into the Eumont zone at an average rate of 200 BWPD at pressures ranging from 0-750 psig.

All interested parties must file objections, if any, or request a hearing with Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days of this notice. M.Y. Merch Merchant (505) 397-3596.

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #2

Type: Producing Oil Well  
Original Operator: Amerada Petroleum Corp.  
Date Drilled: August, 1954

Location: 1980' from N. Line and 660' from West Line, Section 26,  
T205, R36E, Lea County, New Mexico  
Depth: 3990'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	317'	300 Sacks	(Cemented Circulated)
	7"	23#	3990'	800 Sacks	(Cement Top @ 1457')

Perforations: 3804 - 3898  
3910 - 3964

Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. oil and 22,500 # sand

WARRIOR INC.

FEDERAL D.#2

PART VIII: The proposed injection zone is Eumont and lithology is sandy dolomite. The top of the Eumont is 3670' and injection zone is 3804-3964' . The only fresh water in the area is the Ogallala at 150-250' from surface. There is no fresh water zones below the injection zone.

PART IX: There are no plans to acidize the injection zone at this time.

PART X : Should be on NMOCD file.

PART XI : A fresh water well exist east of the proposed injection well. A water analysis from the same well is attached.

XI : C-108

To Warrior Inc.

Sample Number 218  
\*Milligrams per liter

Submitted by Mr. Merchant Date Received 06-05-91

Well No. see below Depth \_\_\_\_\_ Formation \_\_\_\_\_

County Lea Field Monument Source Water Well

Resistivity....	5.0 @ 74°F		
Specific Gr....	0.985		
pH.....	8.4		
Calcium*.....	800		
Ca			
Magnesium*.....	nil		
Mg			
Chlorides*.....	650		
Cl			
Sulfates* .....	525		
SO <sub>4</sub>			
Bicarbonates*..	763		
HCO <sub>3</sub>			
Soluble Iron*..	nil		
Fe			

Sample from well west of Tuffy Coopers House

Remarks:

\*Milligrams per liter

John Eubank  
Respectfully submitted,

Analyst: \_\_\_\_\_

HALLIBURTON COMPANY

cc:

By \_\_\_\_\_  
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

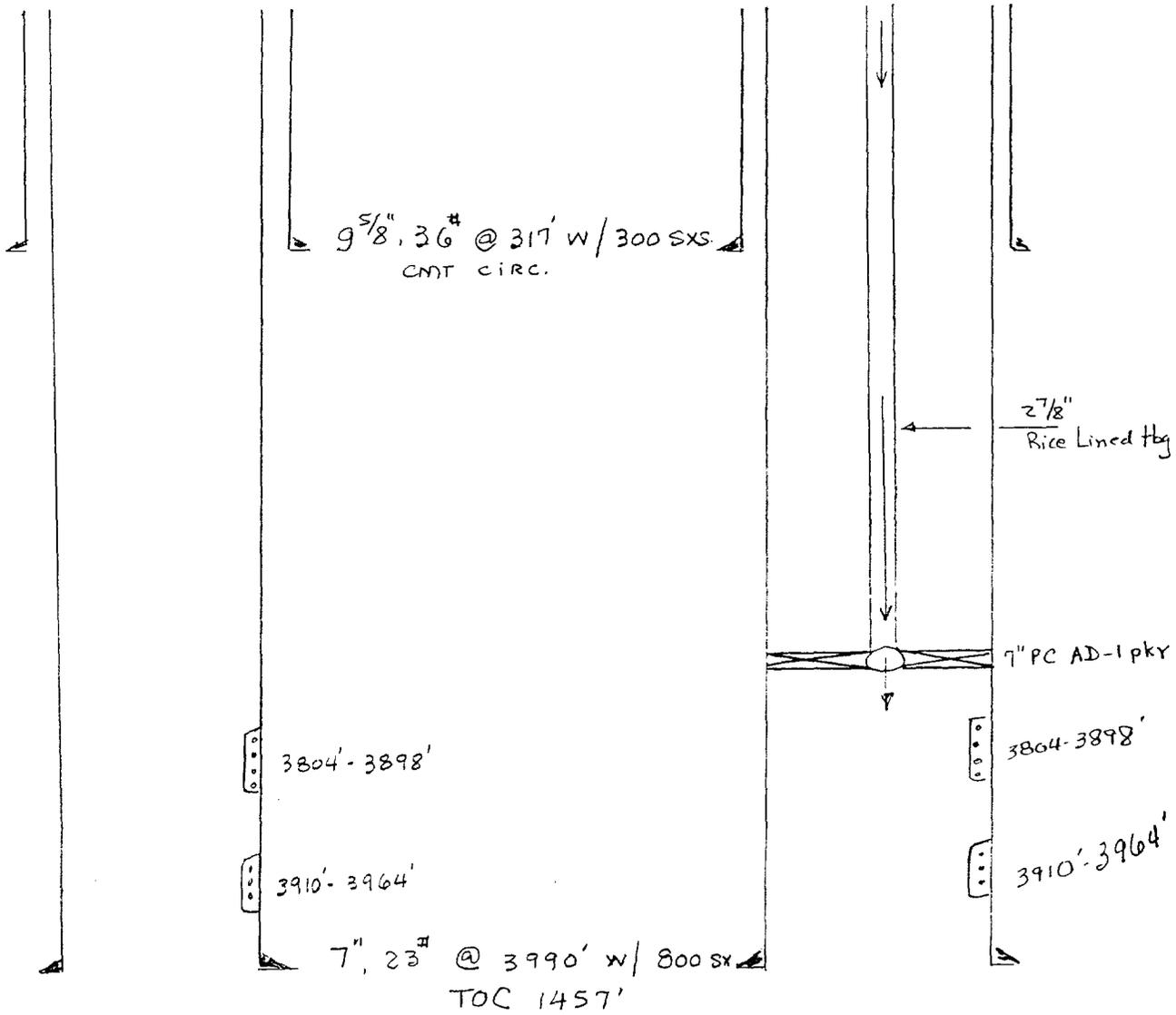
WARRIOR INC.

FEDERAL "D" NO. 2

PART XII

WARRIOR INC. has examined available geologic and engineering data, and finds no evidence of open faults or any other hydrologic connection between the injection zone and any source of drinking water.

FEDERAL "D" NO. 2



WARRIOR INC.

FEDERAL D WELL NO. 2

PART III. DATA ON PORPOSED OPERATION:

1. Average injection rate is estimated at 200 bwpd, and maximum injection should not exceed 200 bpd.
2. This will be a closed system.
3. Average injection pressure is estimated to be vacuum, and maximum is estimated to be 750 psig.
4. Not applicable.
5. Not applicable.

WARRION INC.

FEDERAL "D" NO. 2

CHEVRON USA INC.

Eunice Monument South Unit B (formerly Conoco Reed B #9)

Unit Letter M, Section 23, T205, R36E

Drilled to 3977'; 8 5/8" 28# @ 1437' w/650 sxs.

5 1/2" 14# @ 3971' w/1413 sxs.

Perf.: 3870' - 3920'

Fed. form filed 3/5/91 to convert well to injection by

NMOCD order # R7766A.

WARRIOR INC.

FEDERAL "D" NO. 2

PART VI FORM C-108

- 1) YARBROUGH OIL  
Elliott State No. 1 Unit Letter P  
330' FEL, 990' FSL  
Section 27, T205, R36E  
Lea County, New Mexico
  
- 2) 8 5/8" 24# @ 319' TOC Surface  
5 1/2" 155# @ 4080' w/800 sxs.  
Perf.: 3964' - 84'; 3998' - 4005'  
C-103 filed in '81 to set plug @ 3900'  
Perf. 3624' - 3684'. No follow-up in OCD Hobbs office

## WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: State WE "D" #1

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Jan., 1954

Location: 1980' from South Line and 660' from East Line, Section 27,  
T205, R36E, Lea County, New Mexico

Depth: 7201'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	13 3/8"		291'	300 sx	(Cement Circulated)
	8 5/8"		2990'	1500 sx	(Cement Circulated)
	5 1/2"		7189'	1150 sx	(Top Cement @ 2000 ft.)

Perforations: 3930 - 4005  
4025 - 4085  
4125 - 4170

Stimulation: 1,000 gal. Acid  
Frac w/10,000 # sand, set CIBP @ 4110'  
4/60 set CIBP @ 3605'  
Perf. 3460 - 92  
3530 - 3542  
Stim. 1,000 gal. Acid  
Frac 25,000 gal. + 64,000 # sand  
"Not Successful"

[Temp. Abdon. 10/27/60]

Feb, 1973 - Ran Rods, Tubing and Pump and put on production.

Well is currently TA'd

## WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #1

Type: Producing

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: July, 1954

Location: 660' from West Line and 1980' from South Line, Section 26,  
T205, R36E, Lea County, New MexicoDepth: 4145'  
PBTD

Completion Record:	Size	Wt.	Depth.	Cement	Comments
Casing:	9 5/8"	36#	337'	300 sacks	
	7"	23#	4145'	800 sacks	(Top Cement @ 2433')

Perforations: 4027 -4063

Stimulation: 500 gal. Acid  
Frac w/6,000 # sand, swab test 1 BW/hr. + 6 BW/hr.  
sqz. w/100 sacksPerforations: 3826 - 3910  
3922 - 3975Stimulation: 1,000 gal. Acid  
Frac w/6,000 gal. oil and 6,000 # sandPerforations: 3605 - 3625  
3673 - 3714Stimulation: 1,000 gal. Acid  
Frac w/6,000 gal. + 6,000 # sand, swab 1 BW/hr. + 6 BW/hr.  
sqz. w/75 sx.Perforations: 3324 - 70  
3380 - 3428Stimulation: 1,000 gal. Acid  
Frac w/6,000 gal. oil + 6,000 # sand, swab test 1 BW/hr.  
sqz. w/755 sx.Drill out plugs to open 3826 - 3910, 3922 - 3975  
PBTD 3974

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #3  
 Type: Producing  
 Original Operator: Amerada Petroleum Corp.  
 Current Operator: Warrior Inc.  
 Date Drilled: Sept, 1954  
 Location: 1980 from North Line and 660 from East Line of Section 27,  
 T205, R36E, Lea County, New Mexico

Depth:

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	305'	300 sx	
	7"	23#	4075'	800 sx	(Top Cement @ 2351')

Perforations: 4012 - 4060  
 Stimulation: 1,000 gal. Acid  
 Frac w/7,000 gal. + 7,000 gal. # sand  
 Swab 5 BO/hr. + 5 Bw/hr.  
 Set CIBP @ 4,006'

Perforations: 3912 - 4000  
 Stimulation: 1,000 gal. Acid  
 Frac w/20,000 gal. + 20,000 # sand  
 Nov., 1956-Drilled out plug @ 4006'

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #4

Type: Currently producing

Original Operator: Amerada Petroleum Corp.  
 Current Operator: Warrior Inc.

Date Drilled: Oct., 1954

Location: 660' from West Line and 660' from North Line, Section 26,  
 T205, R36E, Lea County, New Mexico

Depth: 3980'  
 PBTB 3973'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"	36#	328'	300 sx	
	7"	23#	3980'	800 sx	(Top Cement @ 2334')

Perforations: 3989 - 3947

Stimulation: 500 gal. Acid  
 Frac w/20,000 gal. + 22,500 # sand

Flowing well - Currently pumping

## WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #5

Original Operator: Amerada Petroleum Corp.  
Current Operator: Warrior Inc.

Date Drilled: Jan., 1955

Location: 660' from West Line and 660' from South Line, Section 26,  
T205, R36E, Lea County, New MexicoDepth: 3955'  
PBSD 3950'

Completion Record:	Size	Wt.	Depth.	Cement	Comments
Casing:	9 5/8"		317'	400 sx	(Circulated)
	7"	23#	3955'	800 sx	(Top Cement 2211 -28)

Perforations: 3848 - 3940

Stimulation: 1,000 gal. Acid  
Frac w/20,000 gal. + 20,000 # sandPerforations: 3360 - 3410 -Gas  
3440 - 3460 -GasStimulation: Frac w/ 20,000 gal. + 20,000 # sand  
11/57- Frac w/40,000 gal. + 40,000 # sand  
Zone started making oil in May 1958  
7/60- Pulled Dual Packer

Currently, well is TA'd

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #6

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: Feb., 1955

Location: 1980' from West Line and 660' from South Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3960'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth.</u>	<u>Cement</u>	<u>Comments</u>
Casing:	9 5/8"		308'	250 sx	(Cement Circulated)
	7"	23#	3960'	800 sx	(Cement Top @ 1513')
	D.V. Collar		1998'	500 sx	(Did not Circulate)
Perforations:	3746 - 3808				
	3826 - 3888				
Stimulation:	1,000 gal. Acid				
	Frac w/20,000 gal. + 20,000 # sand				
	6/67 Acid w/1,000 gal.				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #7

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: March, 1955

Location: 1980 from South Line and 1980 from West Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3895' (original)

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"		302'	200 sx	(Circulated)
	5 1/2"	15.5#	3705'	800 sx	1356'
	D.V. Collar			600 sx	
	@ 1915'				
Perforations:	3705 - 3895 -open hole				
Stimulation:	Frac w/ 20,000 gal. + 20,000 # sand				
	3/80- set sqz. w/350 sx., deepened to 4520				
	set 4" liner 4520 - 3602, cemented w/355 sx				
Perforations:	4262 - 66				
	4284 - 92				
	4299 - 4305				
	4329 - 36				
	4444 - 46				
	4448 - 58				
	4470 - 76				
Stimulation:	4300 gal. Acid + N <sub>2</sub> , tested water and <u>no gas</u>				
	3/1984 set BP @ 4210'				
Perforations:	4106 - 4118				
Stimulation:	Acid w/2,800 gal., tested 3 BO + 20 BW + 20 MCF				
	10/85- Frac w/ 12,000 gal. + 15,000 # sand				

WARRIOR INC.

FEDERAL "D" NO. 2

Well Name: Federal "D" #8

Type:

Original Operator: Amerada Petroleum Corp.

Current Operator: Warrior Inc.

Date Drilled: March, 1955

Location: 1980 from North Line and 1980 from West Line, Section 26, T205, R36E, Lea County, New Mexico

Depth: 3940'

Completion Record:	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"	32#	1403'	1,000 sx	(Circulated)
	5 1/2"	15.5#	3896'	800 sx	(Cement Top @1181')
Perforations:	3896 - 3940- open hole				
Stimulation:	Acid 1,000 gal				
	Frac w/25,000 gal. + 25,000 # sand				
Perforations:	2/56- 3200 - 3210- gas zone				
	3220 - 3244- gas zone				
Stimulation:	Acid 500 gal.				
	Frac w/10,000 gal. + 10,000 # sand				
Perforations:	4/67- 1 hole @ 3726				
	3742				
	3751				
	3760				
	3794				
	3826				
	3841				
Stimulation:	500 gal. Acid				
	Frac w/30,000 gal. + 30,000 # sand				

## WARRIOR INC.

## FEDERAL "D" NO. 2

Well Name: Federal "D" #9

Type: Producer

Original Operator: Amerada Petroleum Corp.  
Current Operator: Warrior Inc.

Date Drilled: April, 1955

Location: 1980 from West Line and 660 from North Line, Section 26,  
T205, R36E, Lea County, New Mexico

Depth: 3910'

Completion Record:

	<u>Size</u>	<u>Wt.</u>	<u>Depth</u>	<u>Cement</u>	<u>Comments</u>
Casing:	8 5/8"	32#	1385'	900 sx	(Circulated)
	5 1/2"	15.5#	3870'	800 sx	(Circulated)

Perforations: 3870 - 3910- open hole  
Stimulation: Acid 1,000 gal.  
Frac w/25,000 gal. + 25,000 # sand

Perforations: 5/66- 1 hole @ 3728  
3739  
3757  
3777  
3795  
3806  
3813  
3821

Stimulation: Acid 1,000 gal.  
Frac w/25,000 gal. + 10,000 # sand

## WARRIOR INC.

Well Name: Federal D #12

Type: Producing

Original &  
Current Oper. Warrior Inc.

Dated Drilled: December, 1977

Location: 990' from the North Line & 330' from the East line  
Section 27, T-20-S, R-36-E, Lea County, New Mexico

Depth: 4122'

Completion  
Record: 8 5/8" csg. 28#, H-40 set at 334' with 250 sxs. Circ. 50 sxs.  
4 1/2" csg. 10.5#, J-55 set at 4122' with 1150 sxs. circ.  
125 sxs.

Perforations: 3180-3641' , 3950-4067'

Stimulation: Acidized w/6000 gal. of FE acid and 160,000 SCF of Nitrogen

NAME AND ADDRESS OF SURFACE OWNER AND OFF-SET OPERATORS:

SURFACE OWNER: MR. DALE (TUFFY) COOPER  
Monument, New Mexico 88265

OFF-SET OPERATORS:

- 1) YARBROUGH OIL  
P. O. Box 1001  
Eunice, New Mexico 88231
- 2) ZIA ENERGY, INC.  
Box 2219  
Hobbs, New Mexico 88240
- 3) E. L. HEGWER  
Box 1637  
Hobbs, New Mexico 88240
- 4) EXXON USA  
Box 1600  
Midland, Texas 79702
- 5) CHEVRON USA  
Box 1150  
Midland, Texas 79705

EXHIBIT "C"

Dale (Tuffy) Cooper  
Monument, New Mexico 88265

Yarbrough Oil  
P.O. Box 1001  
Eunice, NM 88231

Zia Energy, Inc.  
P.O. Box 2219  
Hobbs, NM 88240

E.L. Hegwer  
P.O. Box 1637  
Hobbs, NM 88240

EXXON USA  
P.O. Box 1600  
Midland, Texas 79702

Chevron U.S.A.  
P.O. Box 1150  
Midland, TX 79705

Bureau of Land Management  
P.O. Box 1778  
Carlsbad, NM 88220

Oil Conservation Division  
P.O. Box 1980  
Hobbs, NM 88240  
Attn: Mr. Jerry Sexton



ADMINISTRATIVE ORDER NO. WFX-751

**APPLICATION OF PENROC OIL CORPORATION TO EXPAND ITS WATERFLOOD  
PROJECT IN THE EUMONT OIL POOL IN LEA COUNTY, NEW MEXICO**

ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-9556, Penroc Oil Corporation has made application to the Division on March 12, 1999 for permission to expand its Eumont Federal 'D' Pilot Waterflood Project in the Eumont Oil Pool in Lea County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

- (1) The original application was filed in due form.
- (2) Satisfactory information was provided that all offset operators had been duly notified of the application.
- (3) No objection had been received within the waiting period as prescribed by Rule 701(B).
- (4) The proposed injection well are eligible for reinstatement of injection authority.
- (5) The proposed reinstatement of the above referenced waterflood project will not cause waste nor impair correlative rights.
- (6) The application for reinstatement should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Penroc Oil Corporation, be and the same is hereby authorized to inject water into the upper Queen formation through perforations at approximately 3912 feet to approximately 4060 feet using 2 7/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the following described well for purposes of secondary recovery, to wit:

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***Eumont Federal 'D' Well No.3***  
Unit 'H' of Section 27, Township 20 South, Range 36 East  
Injection Interval: 3912 feet to 4060 feet  
Maximum Injection Pressure: 782 psi

**IT IS FURTHER ORDERED THAT:**

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure to .2 psi per foot of depth to the uppermost injection perforations of the well.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the upper Queen formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Hobbs district office of the Division of the failure of the tubing, casing or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

The subject well shall be governed by all provisions of Division Order No. R-9556, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

*Administrative Order WFX-751*

*Penroc Oil Corporation*

*March 31, 1999*

*Page 3*

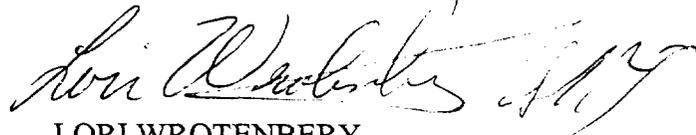
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PROVIDED FURTHER THAT, jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

DONE at Santa Fe, New Mexico, on this 31st day of March, 1999.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



LORI WROTENBERY  
Director

S E A L

LW/BES/kv

cc: Oil Conservation Division - Hobbs  
Bureau of Land Management - Carlsbad  
Case File No.10347 /