WFX 12/26/97

PIONEER

December 9, 1997

RECEIVED
DEC 10 1997
OIL CONSERVATION DIVISION

New Mexico Oil Conservation Division
Attn: Mr. David Catanach
2040 South Pacheco
Santa Fe, NM 87505

RE: Application for Authorization to Inject
Lusk West (Delaware) Unit
Lea County, New Mexico

Dear Mr. Catanach:

Pioneer Natural Resources USA, Inc. is requesting your authorization to inject into the two wells described below, which are located within the Lusk West (Delaware) Unit. Enclosed you will find an original C-108 and one copy for your review.

The applicant proposes to inject saltwater into the Delaware Formation, at an approximate depth, rate, and pressure of 6450', 900 BWIPD and 1280 PSI, respectively. The proposed injectors will be called the Southern California Federal #14, which will be located in Unit C, 990' FNL & 1880' FWL, Section 29, T19S, R32E and the Lusk Deep Unit "A" #23, which will be located in Unit K, 1980' FSL & 1980' FWL, Section 20, T19S, R32E, both in Lea County, NM.

Any questions concerning this application should be forwarded to the attention of Scott H. Lackey at the address above or call (915) 571-3976.

Sincerely,

Pioneer Natural Resources USA, INC.

Scott H. Lackey
Operations Engineer

Enclosures

P.O. BOX 3178 • MIDLAND, TEXAS 79702-3178 • 303 W. WALL, SUITE 101 • MIDLAND, TEXAS 79701 • MAIN (915) 683-4768 • FAX (915) 571-5063

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

LUSK WEST (DELAWARE) UNIT

Lea County, New Mexico

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APPLICATION

FORM C-108

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [XX] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [XX] yes [ ] no

II. Operator: Pioneer Natural Resources USA, Inc.

Address: P.O. Box 3178, Midland, TX 79702

Contact party: Scott H. Lackey Phone: (915) 571-3976

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? [XX] yes [ ] no
If yes, give the Division order number authorizing the project R-10863.

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: Scott H. Lackey Title Operations Engineer

Signature: Scott H. Lackey Date: 12/11/97

* 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. Hearing Date 2/6/97. Case Nos. 11,703 and 11,704.

DISTRIBUTION: Original and one copy to Santa Fe with one set of attachments

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.

INJECTION WELL DATA SHEET

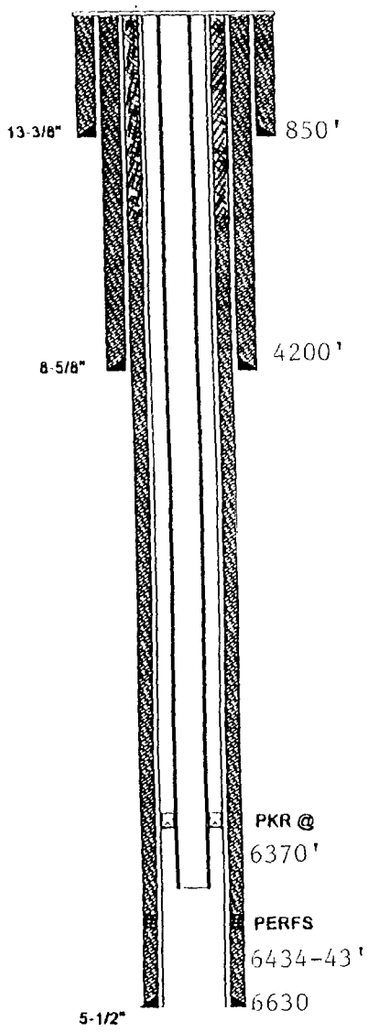
SECTION III

OPERATOR: Pioneer Natural Resources, USA, Inc. LEASE: SOUTHERN CAILFORNIA FEDERAL

WELL NO 14 WIW | SEC-29 | T-19-S | R-32-E

FOOTAGE LOCATION | SECTION | TOWNSHIP | RANGE

SCHEMATIC



WELL CONSTRUCTION DATA

1. SUFACE CASING

SIZE: 13-3/8 INCHES CEMENTED WITH: 675 S

TOC: Surface FEET DETERMINED BY: Circulating

HOLE SIZE: 17-1/2 INCHES

2. INTERMIDIATE CASING

SIZE: 8-5/8 INCHES CEMENTED WITH: 1860 S

TOC: Surface FEET DETERMINED BY: Circulating

HOLE SIZE: 12-1/4 INCHES

3. LONG STRING

SIZE: 5-1/2 INCHES CEMENTED WITH: 900 S

TOC: Surface FEET DETERMINED BY: Circulating

HOLE SIZE: 7-7/8 INCHES

4. INJECTION INTERVAL 6434 FEET TO: 6443 FEET

(PERFORATED OR OPEN HOLE ; INDICATE WHICH)

"PERFORATED"

5. TOTAL DEPTH: 6630 FEET

6. TUBING SIZE

SIZE: 2-3/8 INCHES LINED WITH: IPC 505 - PLASTIC COATING

SET IN A: ARROW SET 1-XS, PKR PACKER AT: 6370 FEET:

OTHER DATA

A. IS THIS A NEW WELL DRILLED FOR INJECTION? XX YES _____ NO

IF NO, FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED? _____

B. NAME THE INJECTION FORMATION: 6400' SAND (BRUSHY CANYON)

C. NAME THE FIELD OR POOL (IF APPLICABLE) LUSK WEST (DELAWARE)

D. HAS THE WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)? LIST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGED DETAIL, I.E. SACKS OF CEMENT OR PLUG(S) USED. NO

E. GIVE THE NAME(S) AND DEPTH(S) OF ANY OVER OR UNDERLYING OIL OR GAS ZONES IN THIS AREA:

1. YATES 2600'-2800'	WATKINS YATES
	N.E. LUSK YATES
	S. LUSK YATES
2. DELAWARE 4600'-7100'	W. LUSK DELAWARE
	LUSK DELAWARE
3. BONE SPRING 8200'-8950'	WATKINS BONE SPRING
	LUSK BONE SPRING
	S. LUSK BONE SPRING
	E. LUSK BONE SPRING
4. WOLF CAMP 10100'-10700'	LUSK WOLFCAMP OIL
	E. LUSK WOLFCAMP OIL
5. STRAWN 11000'-11200'	LUSK STRAWN OIL
6. ATOKA 11200'-11400'	LUSK ATOKA GAS
7. MORROW 11500'-12000'	LUSK MORROW GAS
	N.W. LUSK MORROW GAS
	N. LUSK MORROW GAS

FORM C-108
SECTION III
APPLICATION FOR AUTHORIZATION TO INJECT

WATER INJECTION WELL

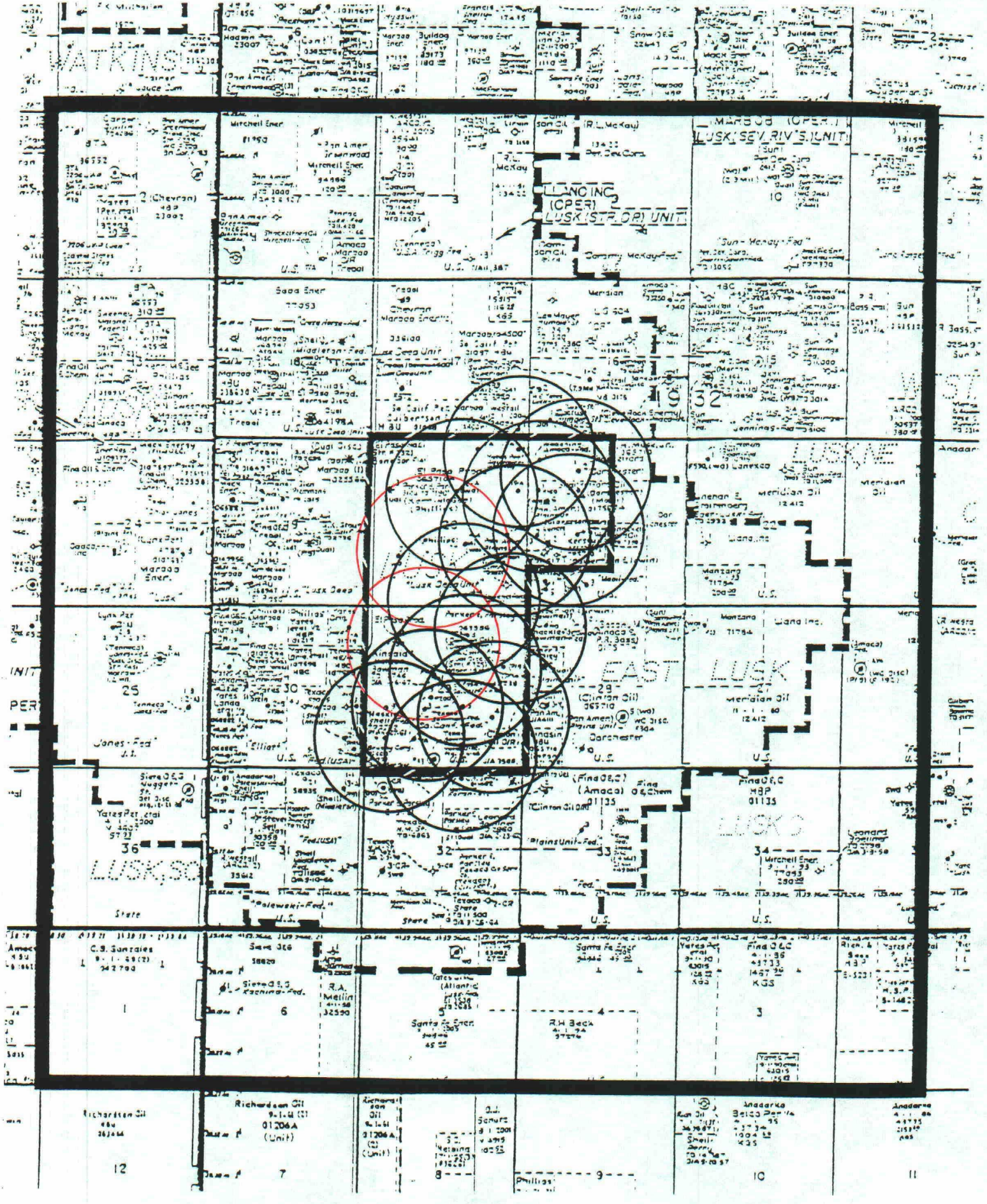
MAP OF AREA

SECTION V

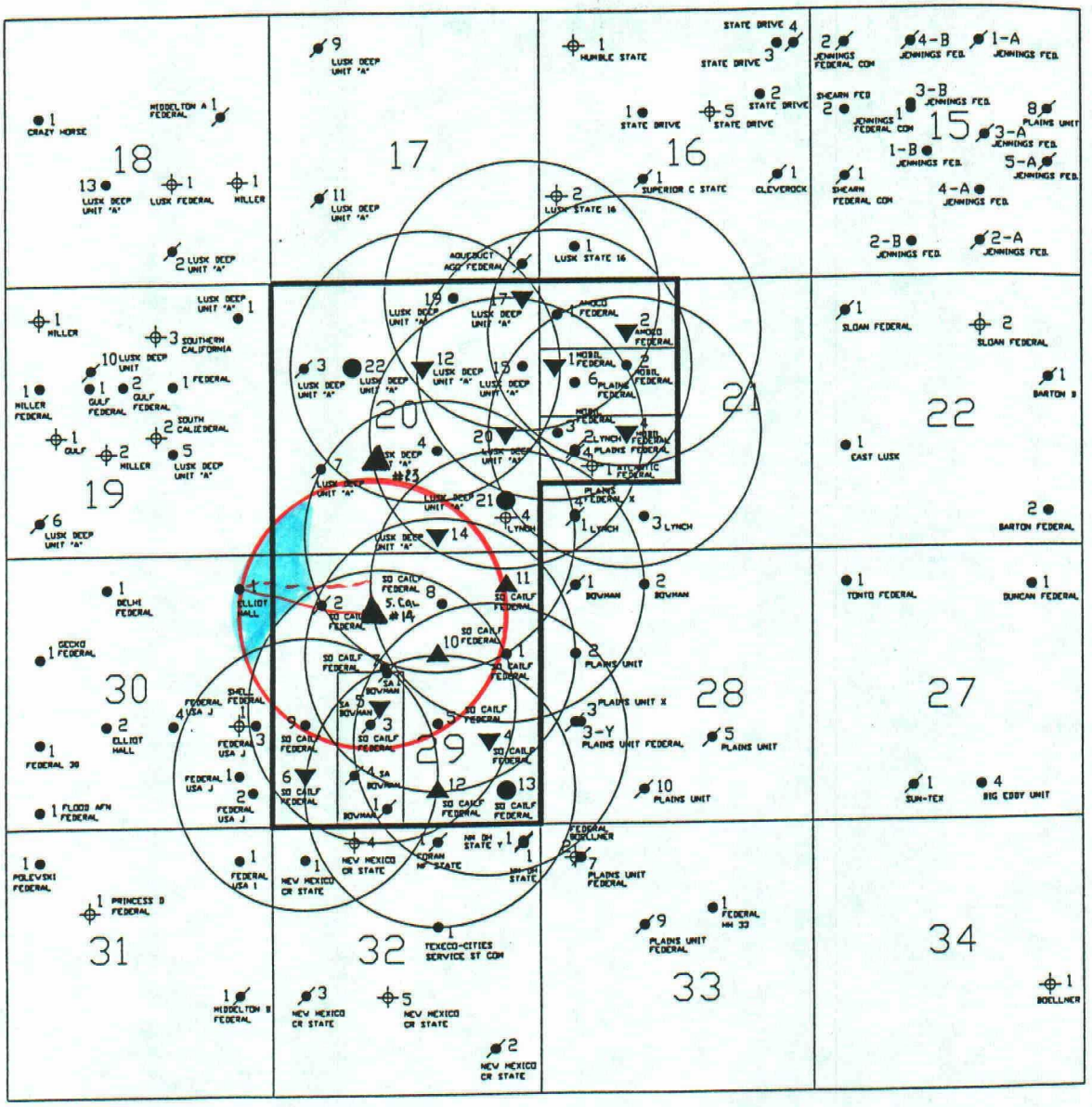
LUSK WEST (DELAWARE)

LEA COUNTY, NEW MEXICO

LAND PLAT OF TRACTS & LEASES COVERING UNIT AREA



LUSK WEST (DELAWARE)
LEA COUNTY, NEW MEXICO
LAND PLAT OF TRACTS & LEASES COVERING UNIT AREA



890'FNL
660'FWL
△ 330'

1880'FNL
+660'FEL
△ 2540 → 2561

5'3,
2&40

0079

TABULATIONS OF WELL DATA

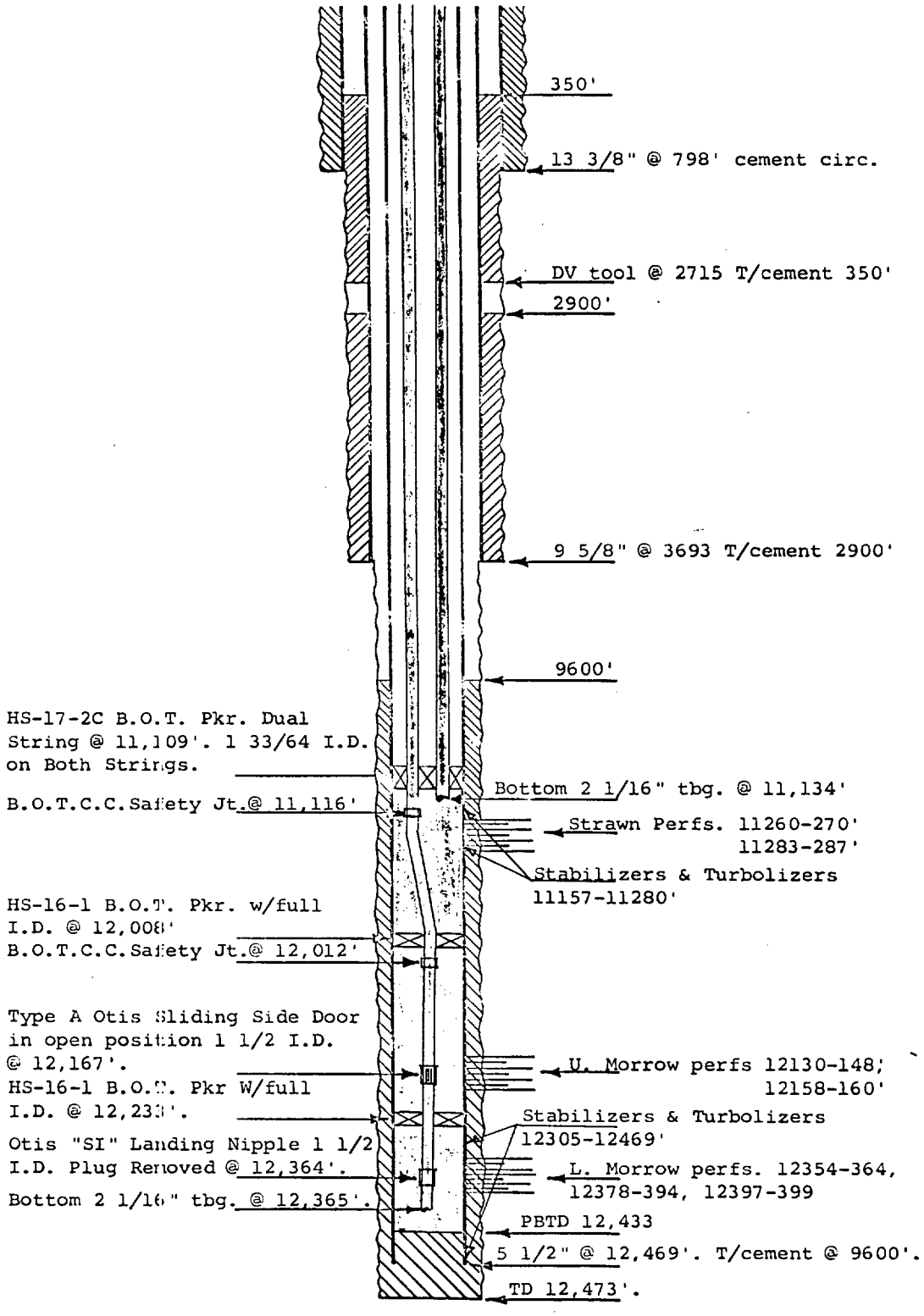
SECTION VI

INFORMATION REQUIRED UNDER SECTION VI WAS PREVIOUSLY SUBMITTED UNDER CASE NOS. 11,703 AND 11,704 ON FEBRUARY 6, 1997.

ONLY ADDITIONAL INFORMATION REQUIRED IS FOR THE ELLIOTT-HALL FEDERAL #1 LOCATED IN UNIT A, SECTION 30, T19S, R32E.

S. P. Yates & Martin Yates, III #1 Federal Elliott Hall
660' FWL & 660'FEL Sec. 30, T. 19S., R. 32E., N.M.P.M. Lea County, N.M.
Dual Completion System (Strawn & Morrow Formations)

SPUD 9/28/62



DATA SHEET ON PROPOSED OPERATIONS

SECTION VII

FORM C-108

SECTION VII

1) Proposed Average Daily Injection Rate - 400 BWIPD
   Proposed Maximum Daily Injection Rate - 900 BWIPD

2) This will be a closed system

3) Estimated Average Injection Pressure - 700 PSI
   Estimated Maximum Injection Pressure - 1280 PSI

4) See attached letter and chemical analysis

5) Does not apply.

Champion Technologies, Inc.
P.O. BOX 2187
HOBBS, NEW MEXICO 88240
Telephone (505) 393-7726

December 10, 1996

Parker & Parsley
P.O. Box 3178
Midland, Tx. 79702

Attn: Britt Hirth

Dear Mr. Hirth,

According to reports, Parker & Parsley is planning to inject water at the Lusk West Delaware lease. Water from the Seven Rivers formation is going to be commingled with the Delaware water. When mixed these two waters show to have a Calcium Sulfate scaling tendency, thus making these two water incompatible.

Champion Technologies is recommending a scale inhibitor be injected continuously into the commingled injection water at a treating rate of 15 to 25 ppm. This treatment will inhibit the Calcium Sulfate scale from depositing in the injection wells and improve the quality of the injection water to acceptable levels. Compatibility tests with scale inhibitors and the injection water should be performed before a scale inhibitor is put in place.

If you have any questions please contact me in the Hobbs office.

Regards,

Kenny Kearney

Kenny Kearney

FORM C-108
SECTION VII
ITEM #4

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

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

RESULT OF WATER ANALYSES

TO: Mr. David Shrauner
P O Drawer E, Kermit, TX 79745

LABORATORY NO. 896141
SAMPLE RECEIVED 8-16-96
RESULTS REPORTED 8-21-96

COMPANY Parker & Parsley LEASE Pronghorn SWD
FIELD OR POOL Lusk
SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Produced water - taken from inlet to gunbarrel. 8-16-96
NO. 2 Produced water - taken from Southern California heater treater (water pump). 8-16-96
NO. 3 Produced water - taken from outlet from gunbarrel. 8-16-96
NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1436	1.1718		
pH When Sampled				
pH When Received	6.19	6.18		
Bicarbonate as HCO_3	273	78		
Supersaturation as $CaCO_3$	0	8		
Undersaturation as $CaCO_3$	--	--		
Total Hardness as $CaCO_3$	58,000	83,000		
Calcium as Ca	19,200	28,400		
Magnesium as Mg	2,430	2,916		
Sodium and/or Potassium	61,402	66,136		
Sulfate as SO_4	960	384		
Chloride as Cl	134,936	160,503		
Iron as Fe	11.3	10.5		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	219,202	258,417		
Temperature °F.				
Carbon Dioxide, Calculated	301	86		
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	0.054	0.050		
Suspended Oil	--	--	1,027	
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Sulfate Scaling Tendency	None	None		
Calcium Sulfate Scaling Tendency	None	None		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: The objective herein is to evaluate compatibility between these two waters. A careful study of the waters has revealed no evidence of any incompatibility, therefore, the mixing of these two waters would not be expected to cause any scaling potential or precipitation.

By Waylan C. Martin, M.A.

Form No. 3
FORM C-108
SECTION VII
ITEM #4

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

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

RESULT OF WATER ANALYSES

LABORATORY NO. 896140

TO: Mr. David Shrauner
P O Drawer E, Kermit, TX 79745

SAMPLE RECEIVED 8-19-96

RESULTS REPORTED 8-21-96

COMPANY Parker & Parsley LEASE As listed

FIELD OR POOL Lusk

SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Supply water - taken from Lusk Deep #7.

NO. 2 Produced water - taken from Southern California #5.

NO. 3 Produced water - taken from Southern California #7.

NO. 4

REMARKS: 2. 6,400' 3. 4,700'

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0323	1.1784	1.1721	
pH When Sampled				
pH When Received	5.80	6.31	6.41	
Bicarbonate as HCO_3	488	51	54	
Supersaturation as $CaCO_3$	--	6	4	
Undersaturation as $CaCO_3$	10	--	--	
Total Hardness as $CaCO_3$	8,800	87,000	78,000	
Calcium as Ca	2,520	29,600	28,000	
Magnesium as Mg	608	3,159	1,944	
Sodium and/or Potassium	12,226	67,015	70,258	
Sulfate as SO_4	3,785	313	362	
Chloride as Cl	22,016	164,764	163,344	
Iron as Fe	60.8	2.4	5.2	
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	41,643	264,902	263,962	
Temperature °F.				
Carbon Dioxide, Calculated	1,269	42	35	
Dissolved Oxygen,				
Hydrogen Sulfide	74.0	0.0	0.0	
Resistivity, ohms/m at 77° F.	0.200	0.0	0.0	
Suspended Oil	0.200	0.049	0.050	
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Carbonate Scaling Tendency	None	None	None	
Calcium Sulfate Scaling Tendency	Moderate	None	None	

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

Form No. 3

FORM C-108
SECTION VII
ITEM #4

By

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

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

RESULT OF WATER ANALYSES

TO: Mr. David Shrauner
P O Drawer E, Kermit, TX 79745

LABORATORY NO. 896140 (Page 2)
SAMPLE RECEIVED 8-19-96
RESULTS REPORTED 8-21-96

COMPANY Parker & Parsley LEASE As listed
FIELD OR POOL Lusk
SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Composite Southern California water (equal mix of well #5 & well #7).
NO. 2 Hypothetical combination of 25% Lusk #7 & 75% composite Southern California.
NO. 3 Hypothetical combination of 50% Lusk #7 & 50% composite Southern California.
NO. 4 Hypothetical combination of 75% Lusk #7 & 25% composite Southern California.

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1753			
pH When Sampled				
pH When Received	6.36			
Bicarbonate as HCO_3	53			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	82,500			
Calcium as Ca	28,800	22,230	15,660	9,090
Magnesium as Mg	2,552			
Sodium and/or Potassium	68,637			
Sulfate as SO_4	338	1,200	2,062	2,923
Chloride as Cl	164,054	128,545	93,035	57,526
Iron as Fe	3.8			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	264,432			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.050			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Sulfate Scaling Tendency	None	Mild	Moderate	Severe

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: Letter of recommendation attached.

By Waylan C. Martin, M.A.

Form No. 3

FORM C-108
SECTION VII
ITEM #4

Martin Water Laboratories, Inc.
WATER CONSULTANTS SINCE 1953
BACTERIAL AND CHEMICAL ANALYSES

P. O. BOX 1468
MONAHANS, TEXAS 79756
(915) 943-3234 or 563-1040

709 W. INDIANA
MIDLAND, TEXAS 79701
(915) 683-4521

August 21, 1996

Mr. David Shrauner
Parker & Parsley
P.O. Drawer "E"
Kermit, TX 79745

Subject: Recommendations relative to laboratory #896140 (8-21-96), Lusk Deep #7 and Southern California #5 and #7.

Dear Mr. Shrauner:

The objective herein is to evaluate compatibility between the waters from Lusk Deep #7 and both Southern California #5 and #7. A careful study in this regard has revealed the following:

1. We have made hypothetical combinations of these waters and find that essentially any mixture of these waters would be expected to result in a calcium sulfate scaling potential. However, as the proportion of the water from Lusk Deep #7 increases, we find a proportionate increase in calcium sulfate scaling potential. The most severe scaling potential resulted when we combined 75 percent of the water from Lusk Deep #7 with the other two waters.

2. The results reveal the presence of a slight amount of iron in both of the Southern California wells and hydrogen sulfide in Lusk Deep #7. This evidence indicates iron sulfide precipitation can be expected on the mixing of these waters. It should be understood that we would anticipate variations in the iron content in Southern California #5 and #7 and therefore variations in the amount of iron sulfide that would precipitate when mixed with Lusk Deep #7.

3. This study has revealed no evidence of any other potential incompatibility.

Based on the evidence revealed in this study, we would conclude that these waters are not compatible, and we would recommend the waters not be mixed on the surface nor should Lusk Deep #7 be injected into the zone represented by the Southern California wells.

Yours very truly,

Waylan C. Martin

WCM/mo

FORM C-108
SECTION VII
ITEM #4

GEOLOGICAL DATA SHEET

SECTION VIII

FORM C-108 SECTION VIII

Geological Summary

The Lusk West Delaware field is located in Lea county, New Mexico in TWN 19S RGE 32E. As of April 30, 1996 there were 31 (seven inactive) wells producing approximately 9,441 BBLS/Mo, 16,950 MCF/Mo and 13,480 BW/Mo. The field's current producing gas-oil ratio is at 1,795 SCF/BBL as of April 1996. Cumulative production as of April 1996 for the field is 2,106.3 MBBLS, 4,367.3 MMCF and 1,789.8 MBW. Production comes mainly from the 6400' zone in the Delaware Brushy Canyon. There are several other Delaware Brushy Canyon zones including the 4900' sand, 5500' sand, 6650' sand, 7050' sand and the 7200' sand. These zones have contributed about 587 MBBLS & 1,029.2 MMCF. The proposal is to only Waterflood the 6400' sand interval. The wells that contributed to the 6400' zone have produced about 1,519 MBBLS, 3,338.1 MMCF and 1,281 MBW.

The 6400' zone is a deep marine turbidite fan system that runs primarily north-south along the slope break. The sandstone body varies in thickness from 0 to 35+ feet. The sand averages about 22 feet thick. A mineralogic and Petrographic analysis was performed by Western Atlas's Core Laboratories on the Damson Oil Corp. Southern California Federal #7. The following is the results of their analysis.

The sandstone is described as a subarkosic feldspathic sandstone that is fairly well sorted, ranges from very angular to rounded, is mature in texture, is random in grain orientation and has point, floating, straight, concavo-convex grain contacts. The sandstone is primarily composed of monocrystalline quartz, potassium feldspar, dolomite rock fragments, plagioclase and polycrystalline quartz. There is no rock matrix present. The cement is common to abundant, is finely disseminated with fine crystalline dolomite and patches of anhydrite. There is an abundance of intergranular pores, uncommon grain-moldic pores, rare intergranular and very small pores associated with dolomite rock fragments and dolomite cements. No authigentic clays are present, there is no evidence of sedimentary structures, the pore network is very well interconnected and fractures are not present.

The 6400' Delaware sand exhibits both stratigraphic and structural trapping mechanisms and characteristics. The Lusk West field trends structurally down dip in the easterly direction. There are two visible structural high's setting up a nose in which the thickest portion of the sand body is present. There appears to be an oil-water contact at approximately -2,900' on the down dip side. The up dip extent of field is delineated by sandstone fans that thins in a westerly direction to zero. These fans appear separated by a tight clay rich margin that trends SE to NW across the southern half of Sec. 20.

INJECTION WELL STIMULATION PROGRAM

SECTION IX

FORM C-108

SECTION IX

There will be a small clean up acid job only for each injection well.

LOGGING AND TEST DATA

SECTION X

WELL LOGS WILL BE SUBMITTED UPON COMPLETION OF DRILLING OPERATIONS

CHEMICAL ANALYSIS OF FRESH WATER

SECTION XI

FORM C-108

SECTION XI

There is no known beneficially used fresh water. Water from the Santa Rosa formation is not of sufficient supply and areal extent to justify drilling of water wells. Livestock is watered by private co-ops and pipeline.

AFFIRMATIVE STATEMENT

SECTION XII

FORM C-108

SECTION XII

Not applicable due to nature of the Secondary Recovery application, this section does not apply.

PROOF OF NOTICE

SECTION XIII

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

November 30 1997

and ending with the issue dated

November 30 1997

Kathi Bearden

Publisher

Sworn and subscribed to before me this 28th day of

November 1997

Jodi Henson

Notary Public.

My Commission expires
October 18, 2000
(Seal)

LEGAL NOTICE
November 30, 1997
NOTICE OF APPLICATION FOR FLUID INJECTION WELL PERMIT

Pioneer Natural Resources USA, Inc., P.O. Box 3178, Midland, TX is applying to the New Mexico Oil Conservation Division for a permit to inject into a formation which is productive of oil and gas.

The applicant proposes to inject saltwater into the Delaware Formation, at an approximate depth, rate, and pressure of 6450', 900 BWIPD, and 1280 PSI, respectively. The proposed injector will be called the Southern California Federal #14, which will be located in Unit C, 990' FNL & 1880' FWL, Section 29, T19S, R32E, Lea County, NM.

Any questions concerning this application should be forwarded to the attention of Scott H. Lackey at the address above or call (915) 571-3976.

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 from this publication.

Published in the Hobbs News Sun November 30, 1997.

#15584

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.

a0107472000 01514569

Parker & Parsley
P.O. Box 3178
a/c 057974
MIDLAND, TX 79701

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Bureau of Land Management
2909 West Second St.
Roswell, NM 88201

4a. Article Number

P 085 637 581

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 11-26-97

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Texaco Exploration & Producing
P. O. Box 3109
Midland, TX 79702

4a. Article Number

P 963 560 111

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

NOV 26 1997

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

Mark Hinge

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Yates Drilling Company
110 S. 4th St., Yates Bldg.
Artesia, NM 88210-2123

4a. Article Number

P 963 560 112

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

11-26-97

5. Signature (Addressee)

Peggy Williams

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

Peggy L Williams

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

PIONEER
NATURAL RESOURCES USA, INC

November 25, 1997

Bureau of Land Management
2909 West Second St.
Roswell, NM 88201

RE: Application for Authorization to Inject
Lusk West (Delaware) Unit
Lea County, New Mexico

Gentlemen:

Pioneer Natural Resources USA, Inc. is applying to the New Mexico Oil Conservation Division for a permit to inject fluid into a formation which is productive of oil and gas.

The applicant proposes to inject saltwater into the Delaware Formation, at an approximate depth, rate, and pressure of 6450', 900 BWIPD and 1280 PSI, respectively. The proposed injectors will be called the Southern California Federal #14, which will be located in Unit C, 990' FNL & 1880' FWL, Section 29, T19S, R32E and the Lusk Deep Unit "A" #23, which will be located in Unit K, 1980' FSL & 1980' FWL, Section 20, T19S, R32E, both in Lea County, NM.

The Oil Conservation Division requires that the attached information be sent to all offset operators and the surface owner.

Any questions concerning this application should be forwarded to the attention of Scott H. Lackey at the address above or call (915) 571-3976.

Sincerely,

Pioneer Natural Resources USA, INC.

Jeanie Dodd

Jeanie Dodd
Engineering Tech

Enclosures

PIONEER
NATURAL RESOURCES USA, INC.

November 25, 1997

Texaco Exploration & Producing
P. O. Box 3109
Midland, TX 79702

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Lea County, New Mexico

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Pioneer Natural Resources USA, INC.

Jeanie Dodd

Jeanie Dodd
Engineering Tech

Enclosures

PIONEER
NATURAL RESOURCES USA, INC

November 25, 1997

Yates Drilling Company
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Artesia, NM 88210-2123

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Engineering Tech

Enclosures

P.O. BOX 3178 · MIDLAND, TEXAS 79702-3178 · 303 W. WALL, SUITE 101 · MIDLAND, TEXAS 79701 · MAIN: (915) 683-4768 · FAX: (915) 571-5063