



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

BRUCE KING
GOVERNOR

November 2, 1993

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

SWD-540
12/1/93

RE: Proposed:

- MC _____
- DHC _____
- NSL _____
- NSP _____
- SWD _____
- WFX _____
- PMX _____

Gentlemen:

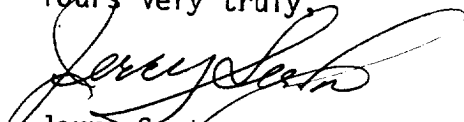
I have examined the application for the:

Phillips Petroleum Co.	Lusk Deep Unit A	#14-0	20-19-32
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Yours very truly,


Jerry Sexton
Supervisor, District 1

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? yes no
- II. Operator: PHILLIPS PETROLEUM COMPANY
Address: 4001 Penbrook, Odessa, Texas 79762
Contact party: Pat Culpepper Phone: 915/368-1542
- 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: Kevin Snow Title North District Prod. Engr. Supvr.
Signature: *Kevin E. Snow* Date: 10/28/93
- * 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.

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.

Application for Authorization to Inject-

PHILLIPS PETROLEUM COMPANY
LUSK DEEP UNIT A WELL NO. 14

III. WELL DATA

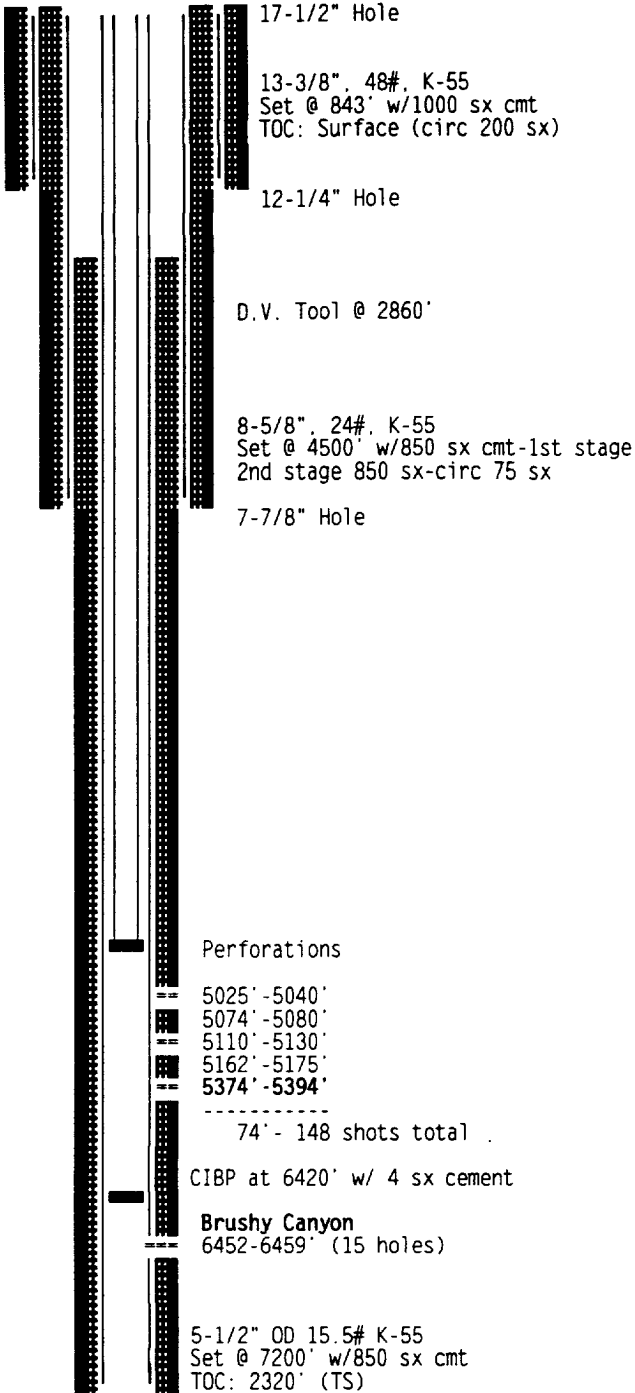
- A. 1. Name and Location: Lusk Deep Unit A Well No. 14
330' FSL & 1980' FEL
Section 20, T-19-S, R-32-E
Lea County, New Mexico
2. Casing
Surface: 13-3/8" OD, 48# K-55 set at 843'. (17-1/2" hole). Cemented with 1000 sacks; TOC at surface (cement circulated).
Intermediate: 8-5/8" 24# K-55 set at 4500'. (12-1/4" hole). Cemented with 1700 sacks. TOC at surface (cement circulated).
Production: 5-1/2" 15.5# K-55 set at 7200'. (7-7/8" hole). Cemented with 850 sacks. TOC at 2320' (Temperature survey)
3. Tubing: 2-7/8" OD 6.5# and 2-3/8" OD 4.7# J-55 set at 4925'. Tubing to have Duoline 20 fiberglass insert.
4. Packer: Elder Sur-Lok Retrievable Packer set at 4925'.
- B. 1. Formation: Delaware (Bell Canyon), Lusk West
2. Interval: 5025'-5394' perforated selectively
3. Original Intent: Well was drilled for oil production
4. Perforated Interval: See Schematic (Attachment 1)
5. Productive Zones: Above the Bell Canyon are salts, anhydrites and shales. There are no productive zones above the Bell Canyon. Below the Bell Canyon there is one pay zone within the Cherry Canyon and 2 zones within the Brushy Canyon. Both of these zones are fine grain sandstones within the Delaware Mountain Group. Each of these zones are separated by shale and sandstone.

111. WELL DATA SCHEMATIC
 PHILLIPS PETROLEUM COMPANY--PERMIAN BASIN REGION
 PROPOSED INJECTION SCHEMATIC
 LUSK DEEP UNIT A WELL NO. 14

KB @ 3580.6
 GL @ 3563.6

Area North Subarea Lovington Date October 8, 1993
 Lease & Well No. Lusk Deep Unit-A #14 Spud Date: 11-02-88
 Legal Description 330' FSL & 1980' FEL, Sec. 20, T-19-S, R-32-E
 Lea County State: New Mexico

Field West Lusk Delaware
 Status BOPD BWPD MCFD
 Tbg. 2-3/8" and 2-7/8" J-55, DuoLine, set at 4925'.
 Elder Sur-Lok packer set at 4925'.



TD: 7,200'
 PBTD: 7,155'

H:\WELLFILE\LOVINGTN\LUSK-A\#14.S01

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

General Manager

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

October 20, 1993

and ending with the issue dated

October 20, 1993

Kathi Bearden

General Manager

Sworn and subscribed to before

me this 21 day of

October, 1993

Christine Perren

Notary Public.

My Commission expires

March 15, 1997

(Seal)

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.

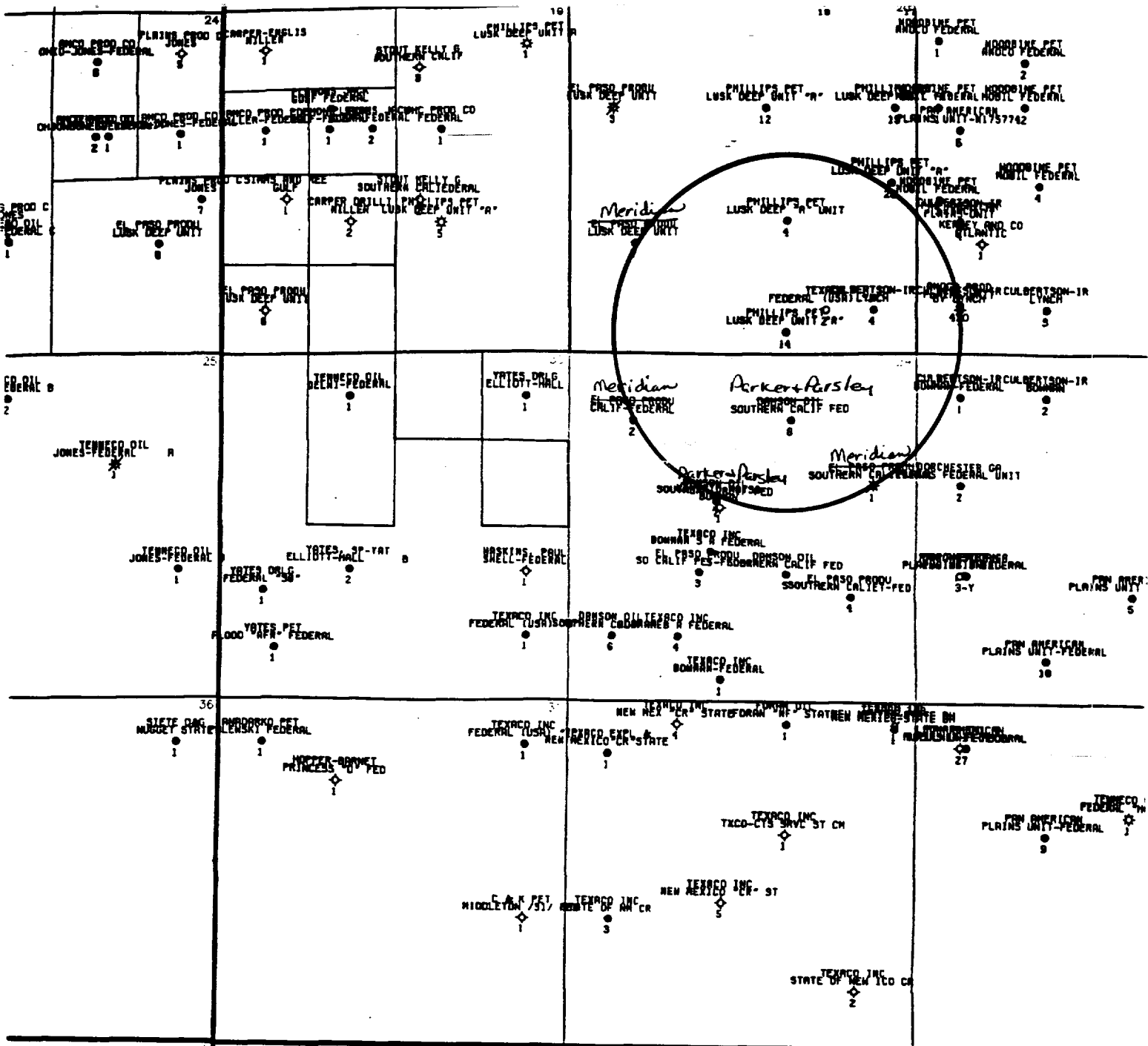
LEGAL NOTICE
October 20, 1993

Notice is hereby given of the application of Phillips Petroleum Company, 4001 Penbrook Street, Odessa, Texas 79762, Attn: L. M. Sanders, (915) 368-1488, to the Oil Conservation Division, New Mexico Energy and Mineral Department, for approval of the following Disposal well authorization for the purpose of Disposal:


Well name: Lusk Deep Unit A Well No. 14.

Location: 330 feet from the South line and 1980 feet from the East line. Section 20, T-19-S, R-32-E, Lea County, NM. The Disposal formation is Bell Canyon at a depth of 5025'-5394' below the surface of the ground.

Expected maximum injection rate is 500 bbls water



MAP LEGEND	
CULTURE DATA:	
	STATE OUTLINE
	COUNTY OUTLINE
	TOWNSHIP
	SECTION - BLOCKS
	LOTS
LUSMF WELLS	
	DRY HOLES
	OIL WELLS
	GAS WELLS
	GAS & CONDENSATE
	MULTIPLE COMP., OIL
	MULTIPLE COMP., GAS
	MULTIPLE COMP., GAS & COND
	MULTIPLE COMP., OIL & GAS
	JUNKED & ABANDONED
	INJECTION, SERVICE WELL
	DATA MISSING
SURFACE LOCATION	
	OPER
	LSE
	WNO



PHILLIPS PETROLEUM COMPANY

EXPLORATION & PRODUCTION

LUSK DEEP UNIT # 14

SEC. 20 T-19-S, R-32-E
 CREATED BY: LEE SUMMERS

V. 1/2 MILE RADIUS
 OF PROPOSED WATER DISPOSAL
 PHILLIPS PETROLEUM COMPANY

APPLICATION FOR AUTHORIZATION TO INJECT
 PHILLIPS PETROLEUM COMPANY
 LUSK DEEP UNIT A WELL NO. 14

VI. WELLS WITHIN THE AREA OF INTEREST (1/2 MILE RADIUS OF INVESTIGATION)

Operator	Well Name	Location	Date Completed (DEPTH FT)	Well Type	Size (in)	Surface Casing Depth (ft)	Cement (sq)	Size (in)	Intermediate Casing Depth (ft)	Cement (sq)	Size (in)	Production Casing Depth (ft)	Cement (sq)	TOC (ft)	Initial Completion (zone)	Current Completion (zone)
Culbertson & Irwin, Inc.	Lynch #4 **	660' FSL & 660' FEL Sec 20, T-19-S, R-32-E Lea County, NM	11 January 1943 (2820)	oil	8-5/8	963	50									plugged (ATTACHMENT 2)
Danison Oil	Southern California Federal #8	960' FNL & 1900' FEL Sec 29, T-19-S, R-32-E Lea County, NM	14 May 1968 (7200)	oil	13-3/8	904	722	8-5/8	4504	2700	5-1/2	7192	800	4145 (C)	6446'-6452' (Delaware)	unchanged
Phillips Petroleum Company	Lusk Deep Unit A #4	1960' FEL & 1960' FSL Sec 20, T-19-S, R-32-E Lea County, NM	12 December 1962 (11550)	oil	13-3/8	822	1185	9-5/8	4226	2365	5-1/2	7165	500	5595 (TS)	11430'-11470' (Strawn)	6462'-6472' (Delaware) (ATTACHMENT 3)

** - Did not penetrate proposed disposal zone

TS - Temperature Survey

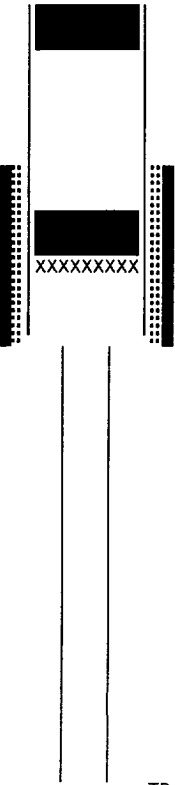
C - Calculated w/50% Safety Factor

Operator Name: Culbertson & Irwin, et al.
Lease & Well No. Lynch # 4 Spud Date: 11/43
Legal Description 660' FSL & 660' FEL, Sec. 20, T-19-S, R-32-E
Lea County State: New Mexico

12-1/4" hole

8-5/8" csg set @ 963'
TOC: 900' w/12-1/4" hole, 50% safety factor
50 SX

Date Completed: 11/3/43



P&A 12/1946
10 sx cmt. on bridge @850'
10 sx cmt. in 8-5/8" = 35'
TOC: 815'
10 sx cmt: @ surface
7-1/2" hole (est)

TD 2820'

WELL SERVICE APPROVAL
MILLIPS PETROLEUM COMPANY--PERMIAN BASIN REG

Lease & Well No. Lusk Deep Unit-A #4 Spud Date: 11/62
Legal Description 1980' FEL & 1980' FSL, Sec. 20, T-19-S, R-32-E
Lea County State: New Mexico

17-1/2" hole

13-3/8" csg set @ 822'

TOC: surface (circ.)
1185 SX
11" HOLE

Hole/Casing Condition: Drld 11/62. P&A'D 10/71. Re-entered 5/88 & fished & pulled approx. 1700' of remaining 4-1/2" csg & ran 5-1/2" csg.

Strawn completed 12/12/1962 Gas well
Delaware completed 08/26/1988 Oil well

9-5/8" 47# to 53.5# csg
set at 4226'
TOC: surface (CIR) 2365 SX

7-7/8" hole

Delaware:
6462-6472' (2 SPF) *current completion

5-1/2" OD K-55 15.5# LT&C
set @ 7165'
TOC @ 5595' (TS) 500sx

4-1/2" csg stub
at approx. 7192'

Calculated
TOC @ 10,750' @ (50% SF)

cmt'd w/25 sx over
perfs.

Strawn:
11.430-11.470'

4-1/2" OD 11.6# to 13.5# csg
set @ 11.531' w/300 sx
25 sx plug @ 11.430-11.470'

TD: 11,550'
PBTD: 7,141'

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GP.O.BOX 2187
HOBBS, N.M. 88240

PHONE: (505) 393-7726

W A T E R A N A L Y S I S R E P O R T

Report for: Randall Smith	Date sampled: 9-20-93
cc: Pat Culpepper	Date reported: 9-27-93
cc: Scott Malone; Danny Palmer	Lease or well # : Lusk Deep A Batt
cc:	County: State:
Company: Phillips	Formation:
Address:	Depth:
Service Engineer: Kenny Kearney	Submitted by: Kenny Kearney

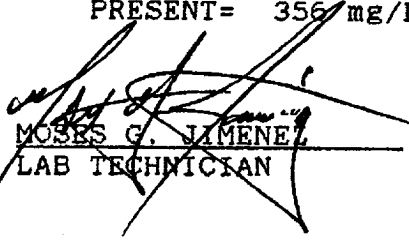
CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	160000	4513
Iron (Fe) (total)	27.0	
Total hardness	100000	
Calcium (Ca)	29674	1481
Magnesium (Mg)	6318	507
Bicarbonates (HCO3)	85	1
Carbonates (CO3)	n/a	
Sulfates (SO4)	251	5
Hydrogen sulfide (H2S)	17	
Carbon dioxide (CO2)	368	
Sodium (Na)	58237	2532
Total dissolved solids	254566	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity 1.181
Density (#/gal.) 9.842
pH 6.300

IONIC STRENGTH 5.52
Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

- SI @ 86 F = +1.50
- 104 F = +1.73
- 122 F = +1.99
- 140 F = +2.28
- 158 F = +2.60

This water is 391 mg/l (-52.34%) under ITS CALCULATED
CaSO4 saturation value at 82 F.
SATURATION= 747 mg/L PRESENT= 356 mg/L

REPORTED BY  MOSES G. JIMENEZ
LAB TECHNICIAN



GP.O.BOX 2187
HOBBS, N.M. 88240

PHONE: (505) 393-7726

WATER ANALYSIS REPORT

Report for: Randall Smith	Date sampled: 9-20-93
cc: Pat Culpepper	Date reported: 9-27-93
cc: Scott Malone; Danny Palmer	Lease or well # : Lusk Deep A#5
cc:	County: State:
Company: Phillips	Formation:
Address:	Depth:
Service Engineer: Kenny Kearney	Submitted by: Kenny Kearney

CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	43000	1213
Iron (Fe) (total)	145.0	
Total hardness	9100	
Calcium (Ca)	3248	162
Magnesium (Mg)	243	20
Bicarbonates (HCO3)	207	3
Carbonates (CO3)	n/a	
Sulfates (SO4)	322	7
Hydrogen sulfide (H2S)	34	
Carbon dioxide (CO2)	245	
Sodium (Na)	23954	1041
Total dissolved solids	70975	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity 1.050
Density (#/gal.) 8.750
pH 6.430
IONIC STRENGTH 1.32

Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

SI @ 86 F = -0.43
104 F = -0.20
122 F = +0.06
140 F = +0.35
158 F = +0.67

This water is 2950 mg/l (-86.61%) under ITS CALCULATED
CaSO4 saturation value at 82 F.
SATURATION= 3406 mg/L PRESENT= 456 mg/L

REPORTED BY  MOSES O. JIMENEZ
LAB TECHNICIAN



GP.O.BOX 2187
HOBBS, N.M. 88240

PHONE: (505) 393-7726

WATER ANALYSIS REPORT

Report for: Randall Smith	Date sampled: 9-20-93
cc: Pat Culpepper	Date reported: 9-27-93
cc: Scott Malone; Danny Palmer	Lease or well # : Lusk Deep A#13
cc:	County: State:
Company: Phillips	Formation:
Address:	Depth:
Service Engineer: Kenny Kearney	Submitted by: Kenny Kearney

CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	47000	1326
Iron (Fe) (total)	115.0	
Total hardness	10600	
Calcium (Ca)	3408	170
Magnesium (Mg)	510	41
Bicarbonates (HCO3)	244	4
Carbonates (CO3)	n/a	
Sulfates (SO4)	217	5
Hydrogen sulfide (H2S)	34	
Carbon dioxide (CO2)	149	
Sodium (Na)	25835	1123
Total dissolved solids	77216	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity 1.055
Density (#/gal.) 8.792
pH 6.400
IONIC STRENGTH 1.44

Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

SI @ 86 F = -0.37
104 F = -0.14
122 F = +0.12
140 F = +0.41
158 F = +0.73

This water is 3119 mg/l (-91.01%) under ITS CALCULATED
CaSO4 saturation value at 82 F.
SATURATION= 3427 mg/L PRESENT= 308 mg/L

REPORTED BY MOSES G. DIMENEZ
LAB TECHNICIAN

Application for Authorization to Inject

PHILLIPS PETROLEUM COMPANY
LUSK DEEP UNIT A WELL NO. 14

IX. PROPOSED STIMULATION PROGRAM

A CIBP will be set at \pm 6420', with 4 sx cement on top. The Bell Canyon will be perforated over the following intervals:

5025'-5040'

5074'-5080'

5110'-5130'

5162'-5175'

5374'-5394'

The injection zone will be acidized with 1850 gallons 7-1/2% NeFe HCl.

X. LOGGING DATA

Well logs were filed after the well was drilled in 1988.

XI. FRESH WATER ANALYSIS

No fresh water sources were available within 1 mile of the proposed disposal.

XII. AFFIRMATIVE STATEMENT

All available geological and engineering data has been examined and no evidence of open faults or any other hydrological connection between the injection zone and underground source of drinking water was found.

ATTACHMENT NO. XIV
Notification

I hereby certify that a complete copy of this application was sent by certified mail to the below listed persons on October 28, 1993.

Signed: for J. M. Sanders
Name: L. M. Sanders
Title: Supervisor, Regulatory Affairs
Date: 10/28/93

Surface Owner:

United States Department of the Interior
Bureau of Land Management
P. O. Box 1397
Roswell, NM 88201

Offset Operators:

Amoco Production Co.
200 Amoco Court
Farmington, NM 87401

Parker & Parsley Dev. Co.
600 W. Illinois Ave. Ste. 103
High Tower Bldg.
Midland, Texas 79701

Culbertson & Irwin
P. O. Box 2918
Midland, Texas 79702

Culbertson & Irwin
P. O. Box 1071
Midland, Texas 79702

Meridian Oil Inc.
2919 Allen Parkway
Houston, Texas 77019