CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS
Operator: <u>PRILLIPS PETROLEUM CO.</u> Well: LUSK DEEP UNIT A WELL UD. Contact: <u>PAT CURPEPER</u> Title: <u>ENG</u> , Phone: <u>915.368.15</u> 42
DATE IN <u>// 4 · 93</u> RELEASE DATE <u>// · 18 · 93</u> DATE OUT <u>// · 18 · 93</u>
Proposed Injection Application is for: WATERFLOOD Expansion Initial
Original Order: R Secondary Recovery Pressure Maintenance
SENSITIVE AREAS
WIPP Capitan Reef Commercial Operation
Data is complete for proposed well(s)? Ues Additional Data
AREA of REVIEW WELLS
<u>3</u> Total # of AOR
Tabulation Complete <u>V</u> Schematics of P & A's
Cement Tops Adequate AOR Repair Required
INJECTION INFORMATION
Injection Formation(s) Beck CANYON
Source of Water <u>PRODUCED - DECAULARE - 470KA - MOTRIMU</u> Compatible Y
PROOF OF NOTICE
Copy of Legal Notice
Correct Operators Copies of Certified Mail Receipts
Objection Received Set to Hearing Date
NOTES:
APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL 445
1st Contact: Y Telephoned Letter Letter Date Nature of Discussion 2nd Contact: Telephoned Letter Date Nature of Discussion
3rd Contact: Telephoned Letter Date Nature of Discussion

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ENERGY	STATE OF NEW MEXICO AND MINERALS DEPARTMENT
APPLICA	TION FOR AUTHORIZATION TO INJECT (13-20) H APP 9 01
Ι.	Purpose: Secondary Recovery Pressure Haintenance X Disposal Storage Application qualifies for administrative approval? X yes no
п.	Operator:PHILLIPS PETROLEUM COMPANY
	Address:4001 Penbrook, Odessa, Texas 79762
	Contact party:Pat_CulpepperPhone: <u>915/368-1542</u>
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.
Ι٧.	Is this an expansion of an existing project? 🔲 yes 🔣 no If yes, give the Division order number authorizing the project
۷.	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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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 ⊍ell 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: Kai E. An Date: 18/28/93

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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:
 - Lease name; Hell 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 parker 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 mame 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. C. 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

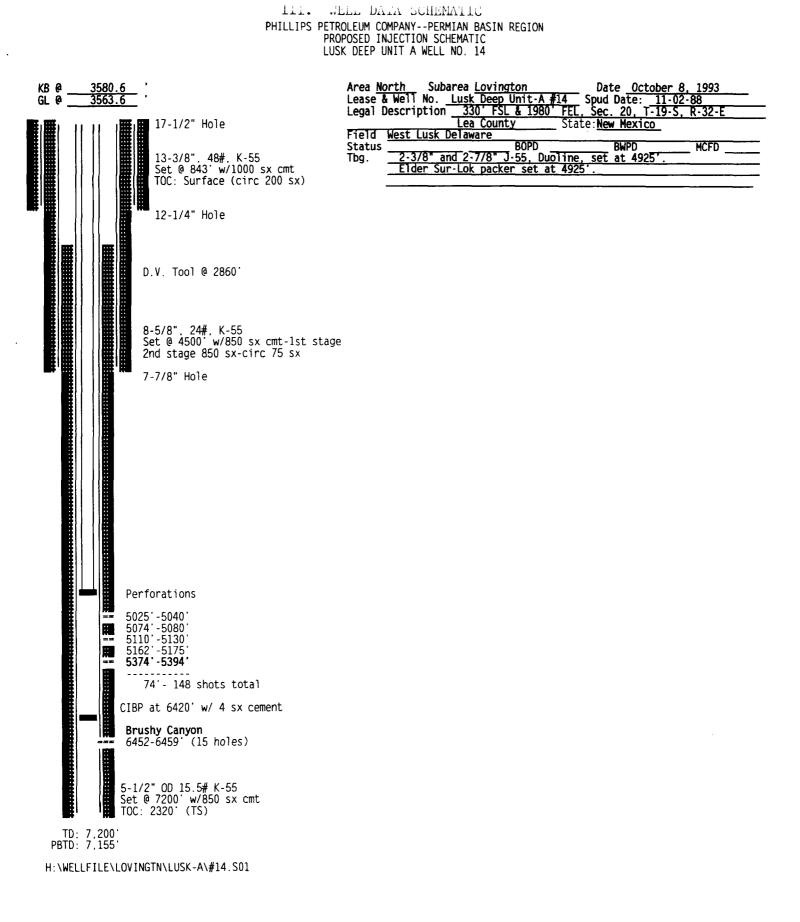
PHILLIPS PETROLEUM COMPANY LUSK DEEP UNIT A WELL NO. 14

III. WELL DATA

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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'.
В.	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.

H:\WELLFILE\LOVINGTN\LUSK-A\WELLDAT



Attachment 1

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

<u>October 20, 1993</u> and ending with the issue dated

,19⁹³ October 20

General Manager

Sworn and subscribed to before

me this day of Hi

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.

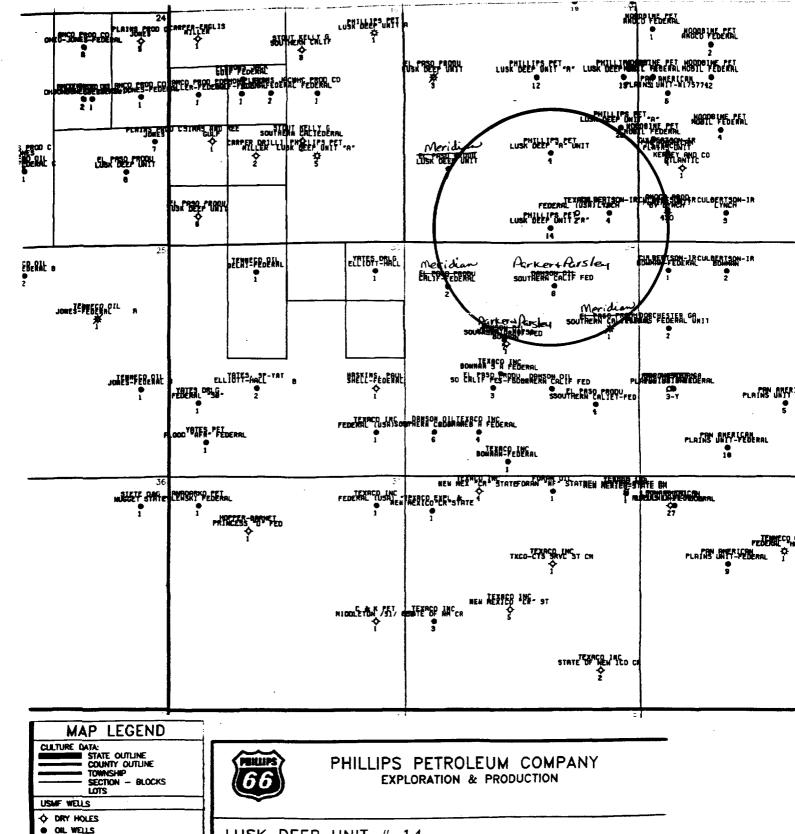
LEGAL NOTICE October 20, 1993

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

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. the surface of the ground. Expected maximum injec-

tion rate is 500 bbls water



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

© JUNKED & ABANDONED -> INJECTION, SERVICE WELL + DATA MISSING

GAS & CONDENSATE

MULTIPLE COMP., OIL

MULTIPLE COMP., GAS

X MULTIPLE COMP., OIL & GAS

OF GAS WELLS

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SURFACE LOCATION

OPER LSE \$₩₩0

MULTIPLE COMP., GAS & COND

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

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VI. WELLSWITHIN THE AREA OF INTEREST (1/2 MILE RADUS OF INVESTIGATION)

Initial Completion Current Completio C (11) zone) (zone)	plugged (ATTACHMENT 2)	(C) (Dalaware) unchanged	5595 11430'-11470' 6462'-6472' (TS) (Strawn) (Delaware) (ATTAC-MENT3)
Production Casing Szze (in) Depth (t) Cement (s. TCC (tt)		7192 800	7165 500 54 (
		2700 5-1/2	2365 5-1/2
Intermediate Casing Size (in) Depth (11) Cement (so)		8—5/8 4504	9-5/8 4226
Surface Casing Depth (ft) Coment (sx)	88 89	904 722	822 1185
	oli 8–5/8	oil 13-3/8	oil 13-3/8
Date Completed (DEPTH FT) Well Type Size (In)	11 January 1943 E (2820)	14 May 1988 E (7200)	12 December 1962 E (11550)
Location	660'FSL& 660'FEL 11 January 1943 Sec 20, T - 19 - S, R - 32 - E (2820) Lea Courty, NM	990' FNL & 1900' FEL 14 May 1988 Sec 29, T - 19 - S, R - 32 - E (7200) Lea County, NM	1980' FEL & 1980' FSL 12 December 1962 Sec 20, T-19-S, R-32-E (11550) Lea County, NM
Well Name	Culbertson & Lynch #4 Irwin, Inc. **	Southern California Federal #8	Lutsk Deep Unit A #4
Operator	Cuthertson & Irwin, Inc.	Damson Oil	Phillips Petroleum Company

** - Did not penetrate proposed disposal zone

TS- Temperature Survey C-Calculated w/50% Safety Factor

12-1/4" hole	Operator Name: Lease & Well N Legal Descript	Culbertson & Irwin, et al. o. <u>Lynch # 4</u> Spud Date: <u>11/43</u> ion <u>660' FSL & 660' FEL, Sec. 20, T-19-S, R-32</u> Lea County State: <u>New Mexico</u>	<u>2-E</u>
8-5/8" csg TOC: 900' w/ 50 SX	set @ 963' 12-1/4" hole,50% safty factor	Date Completed: 11/3/43	
P&A 12/1946 10 sx cmt. on 10 sx cmt. in TOC: 815 10 sx cmt: @ 7-1/2" hole (n	8-5/8" = 35' surface		
TD 2820'			

TD 2820'

H:\WELLFILE\LOVINGTN\Lynch#04.DGU

WELL SERVICE APPROVAL PHILLIPS PETROLEUM COMPANY--PERMIAN BASIN REGION



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Application for Authorization to Inject

PHILLIPS PETROLEUM COMPANY LUSK DEEP UNIT A NO. 14

VII. PROPOSED INJECTION OPERATIONS

1. Rates:	average: maximum:	150 500	
2. System:	closed		
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- 3. Pressures:average:500 psimaximum:1000 psi
- 4. Fluid: Produced water analyses from the Phillips Lusk Deep A Battery (Delaware) ATTACHMENT 4, Lusk Deep No. 5 Well (Atoka/Morrow) ATTACHMENT 5 and Lusk Deep No. 13 (Atoka) ATTACHMENT 6.
- 5. Disposal Zone: The Bell Canyon zone of the Delaware Mountain Group is composed of fine to medium grain sand interbedded with shale. Shows of oil or gas were not apparent in this interval of the Bell Canyon, and the interval was concluded to contain no hydrocarbons.

VIII. GEOLOGICAL DATA

A. Injection Zone:

In this well, the Delaware is from 4552'-7180'. The Bell Canyon is from 4552'-5591'. Porosity in the sand sections varies from 12% to 18%.

The Bell Canyon is found in the upper portion of the Delaware Mountain Group and consists of fine to medium grained sand and shale sequences with an occasional thin dolomite layer. The sand intervals are lenticular and vary significantly in water saturation. These Delaware sands experienced mild tectonic activity since the end of the Permian and faulting plays an insignificant role in the vertical and horizontal permeability separation within the Bell Canyon zone.

B. Fresh Water Sources:

Surface alluvium- From surface to 80' below surface.

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

PHONE: (505) 393-7726

WATER ANALYSIS REPORT

cc:	Date r Anny Palmer Lease County	: Sta	Deep A Batt
Company: Phillips Address:	Format	lon:	
Service Engineer: Kenny Kea	Depth:	tod by. Koppy Ko	
Service Engineer: Kenny Kea	arney Submit	ted by: Kenny Ke	arney
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		
· · · · · · · · · · · · · · · · · · ·	CaCO3) Stability I	ndex :	
-	- pCa - pAlk - K		
SI @	986 F = +1.50		
	104 F = +1.73		
	122 F = +1.99		
	140 F = +2.28		
	158 F = +2.60		
	391 mg/l (-52.3 lon value at 82 F.		
SATURATION= 7	747 mg/L	PRESENT= 356 mg/	L
	. A.	At	
	REPORTED BY MOSE	S G. JAMENEL	-
		TECHNICIAN	
		\vee	
	,		Attachment 4

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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: Formation: Company: Phillips Address: Depth: Service Engineer: Kenny Kearney Submitted by: Kenny Kearney CHEMICAL COMPOSITION : mg/L meg/L Chloride (Cl) 43000 1213 Iron (Fe) (total) 145.0 Total hardness 9100 3248 162 Calcium (Ca) 243 20 Magnesium (Mg) 207 З Bicarbonates (HCO3) Carbonates (CO3) n/a 7 Sulfates (SO4) 322 Hydrogen sulfide (H2S) 34 Carbon dioxide (CO2) 245 23954 1041 Sodium (Na) Total dissolved solids 70975 Barium (Ba) n/a Strontium (Sr) n/a Specific Gravity 1.050 8.750 Density (#/gal.) 6.430 pН 1.32 IONIC STRENGTH Stiff-Davis (CaCO3) Stability Index : SI = pH - pCa - pAlk - KSI @ 86 F = -0.43104 F = -0.20122 F = +0.06140 F = +0.35158 F = +0.67This water is 2950 mg/l (-86.61%) under ITS CALCULATED CaSO4 saturation value at 82 F. 456 mg/L PRESENT= SATURATION= 3406 mg/L REPORTED BY MOSES LAB TEGHNIQIAI

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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 County: State: CC: Company: Phillips Formation: Address: Depth: Submitted by: Kenny Kearney Service Engineer: Kenny Kearney CHEMICAL COMPOSITION : mg/L meg/L 47000 1326 Chloride (Cl) Iron (Fe) (total) 115.0 Total hardness 10600 170 3408 Calcium (Ca) 510 41 Magnesium (Mg) 244 4 Bicarbonates (HCO3) Carbonates (CO3) n/a Sulfates (SO4) 217 5 34 Hydrogen sulfide (H2S) Carbon dioxide (CO2) 149 25835 1123 Sodium (Na) 77216 Total dissolved solids n/a Barium (Ba) n/a Strontium (Sr) 1.055 Specific Gravity 8.792 Density (#/gal.) 6.400 pН 1.44 IONIC STRENGTH Stiff-Davis (CaCO3) Stability Index : SI = pH - pCa - pAlk - KSI @ 86 F = -0.37104 F = -0.14122 F = +0.12140 F = +0.41158 F = +0.73This water is 3119 mg/l (-91.01%) under ITS CALCULATED CaSO4 saturation value at 82 F. 308 mg/L PRESENT= SATURATION= 3427 mg/L **JIMENE** ß REPORTED BY OSES 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 <u>+</u> 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 HCI.

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.

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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: L. M. Sanders Name: Supervisor, Regulatory Affairs Title: 43 Date:

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

17/07	16:49	1 505 393 0720	HOBBS OIL CONSRN →-	→ SANTA FE	2002
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				nch	Well No. 1
			Land Classification 34	1	
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	> <u> </u>		Feet from Line:	X. 660 S .	
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	CASING A	ND CEMENTING RECORD	ACID RECORD		TX 920
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Form 9-381 a (March 1942)

Budget Bureau No. 42-R858. Approval expires 11-80-46.

Land Office AUH CTUDOS Lesse No. 059592 Unit Ja Va Light

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

(SUBMIT IN TRIPLICATE)

SUNDRY NOTICES AND REPORTS ON WELLS

f	SUBSEQUENT REPORT OF WATER SHUT-OFF				
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING				
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING				
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF REDRILLING OR REPAIR				
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF REDRILLING OR REPAIR				
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY				
NOTICE OF INTENTION TO ABANDON WELL					
(INDICATE ABOVE BY CHECK MARK NATIRE OF DEPART NOTICE OF OTHER DATA)					

PORT, NOTICE, OR OTHER

			December	12,	, 19 46
Well No is loca	ated 660 ft.	from S line	and 660 ft. from	$\begin{bmatrix} E \\ \bullet \\$	c. 20
(H Bec. and Bec. No.)	198	325	然。 风。空。	()	
(% Sec. and Sec. No.)	(Twp.)	(Range)	(Meridian)		
ant unk	1	-041	Nev	V Mozico	
(Field)	(Cou	nty or Subdivision)	(8	tate or Territory)	

The elevation of the derrick floor above sea level is 3580 ft.

DETAILS OF WORK

(State names of and sected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, coment-ing points, and all other important proposed work)

Well temporerily spendoned in secondance with Hotics of Hovember 9, 1943. Well has now been finally plugged and abandonod. Hudded hole to surface and set 10 seck coment plug on bridge in 8 5/8" casing at 850'. Also ast 10 each cement plug and mat at surface and erected 4" by 10' steel marker.

l understand (that this plan of work must receive approval in writing	by the Geological Survey before operations may be commenced.	
Company	CLERITION & INVIN, INC.		
Address	Box 1071	De A M I	
·	idland, Texas	By Millimon	-
		TitlePresident	

U. S. GOVERNMENT PRINTING OFFICE 10-8487-2

15:29おひりニキアニタス 同日刊

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