

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? yes no
- II. Operator: H & S OIL COMPANY
Address: SUITE 303, FIRST NATIONAL BANK BLDG., ARTESIA, NM 88210
Contact party: HERBERT R. SPENCER Phone: (505) 746-6658
- 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: Herbert R. Spencer Title PARTNER
Signature: HERBERT R. SPENCER Date: 1-27-86
- * 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.

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SECTION I

Purpose

I. Purpose

To inject produced water from the Yeso formation into the non-productive Canyon formation.

SECTION III

Operator

II. Operator

H & S Oil Company, a partnership composed of R. L. Heinsch and Herbert R. Spencer.

Offices located in the First National Bank Bldg., Suite 303, Artesia, New Mexico. Phone Number (505) 746-6658 or (505) 748-2787

SECTION III
Well Data

III. Well Data

A.

1. Lease Name: Mountain States Petroleum Corporation
Well Name: Santa Fe Land Improvement Company #1
Location: Section 17- T19S- R26E
Footage: 660' FEL & 1980' FSL
2. Casing Record:
14" 36# K-55 Set at 29'
8 5/8" 24# K-55 Set at 1343'
Cemented with 1340 sacks.
3. Plan to use 2 7/8" Tby Eye, with Sealtile. PVC inserts.
4. Watson J Lok packer with nickel coating to be set at 7980'

B.

1. Injection Formation: Canyon
Field name - Four mile draw
2. Perforation intervals: 8060' to 8100'
3. Original well was drilled as a Morrow test.
4. None
5. Wolfcamp - Lower Penn Strawn

C.

1. We plan to run 6910' of 5½" 15.5# casing on the bottom, and 1309' of 5½" 17# casing on the top.
2. We also plan to cement back through 7600' as per Les Clements, Oil Conservation Division representative.

SECTION IV

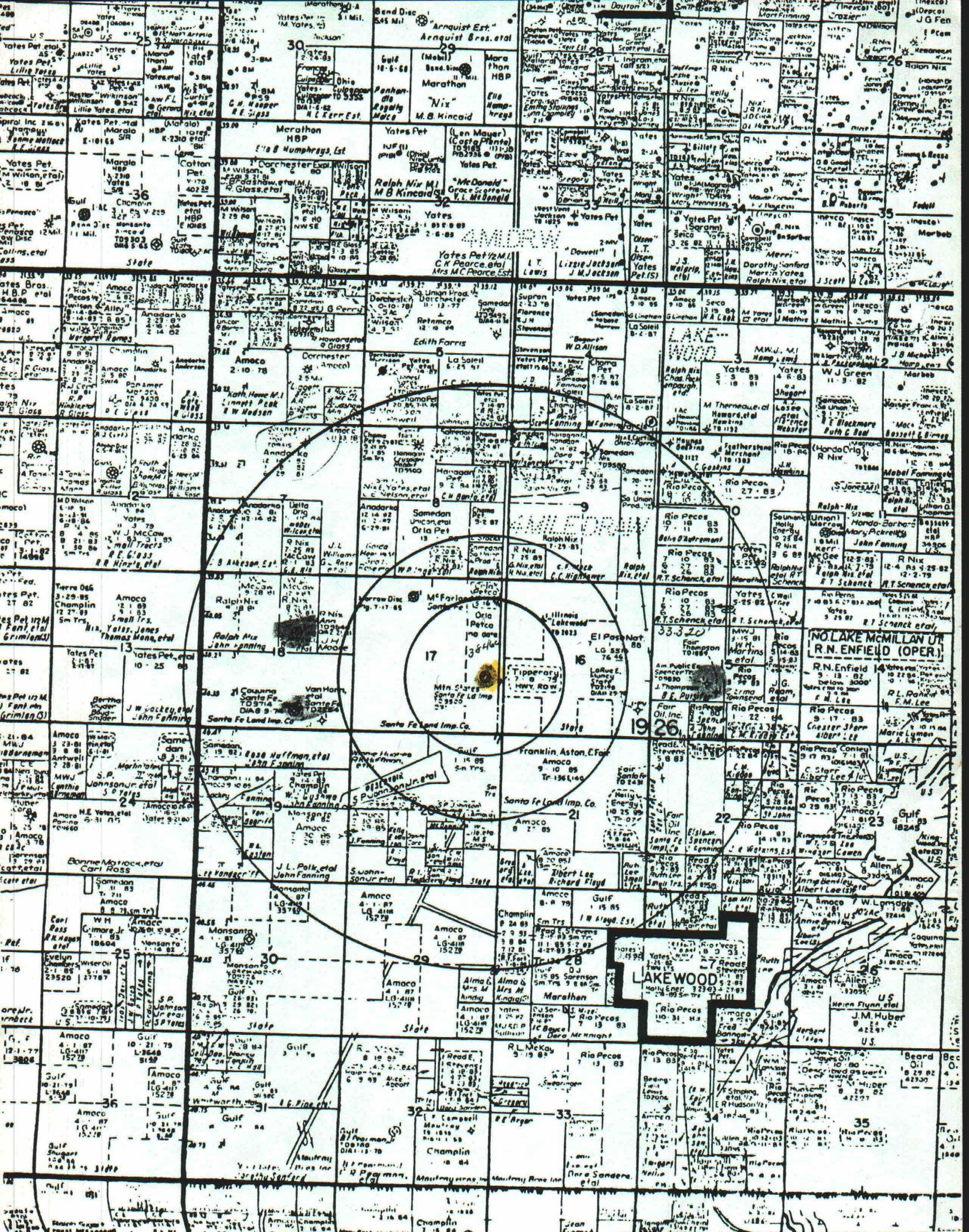
Expansion of existing project?

IV. Expansion of existing project?

This is not an expansion of an existing project.

SECTION V

Area Map



SECTION VI

Tabulation of Well Data

VI. Tabulation of Well Data

Ernest A. Hanson

Santa Fe Land Improvement #1 Unit Letter C

660' FNL - 1980' FWL

Section 17 - T19S - R26E

Dry hole, plugged and abandoned 10-08-67

8 5/8" casing at 1338' - circulated

5 1/2" casing left in hole at 9250' to 5885'

14" at 29' COMPANY H & S Oil Co
LEASE & WELL NO. Santa Fe Tomb
FORMATION Canyon
COUNTY & STATE Eddy - N.M.

8 5/8 24# K-55 - at 1343

2 7/8 Tby with Sealtite p.v.c. liners

packer at 7980

5 1/2 Set at 8219

SECTION VII
Proposed Operation Data

VII. Proposed Operation Data

1. Proposed injection rates:
 - (a). average daily injection rate: 2000 Barrels of water per day
 - (b). maximum daily injection rate: 12 wells x 350 Barrels of water per day = 4200 Barrels of water per day.
2. Proposed system will be open
3. Proposed injection pressure:
 - (a). average daily pressure: unknown
 - (b). maximum daily pressure: 1600 PSI
4. Type of injection fluid from Glorieta/Yeso wells is produced water.
5. Analysis of disposal formation if not produced within one mile:

See Section XI - Chemical Section

SECTION VIII

Geological Data

VIII. Geological Data

1. Geological names of injection zones:

Canyon

2. Lithological detail of injection zones: Top of Canyon zone is 7118' with intermittent porosity streaks, Top of lower Canyon is 7777'.

3. Thickness of injection zone:

Total Canyon: 1659'

4. Depth to injection zone is 7777'.

5. Geologic name and depth of bottom of all underground sources of drinking water (TDS of 10,000 mg/l or less) overlying or immediately under injection zone:

Base of fresh water in area is 880 ft.

Drinking of fresh water underlies the proposed injection.

Yes _____ No X

SECTION IX

Proposed Stimulation Program

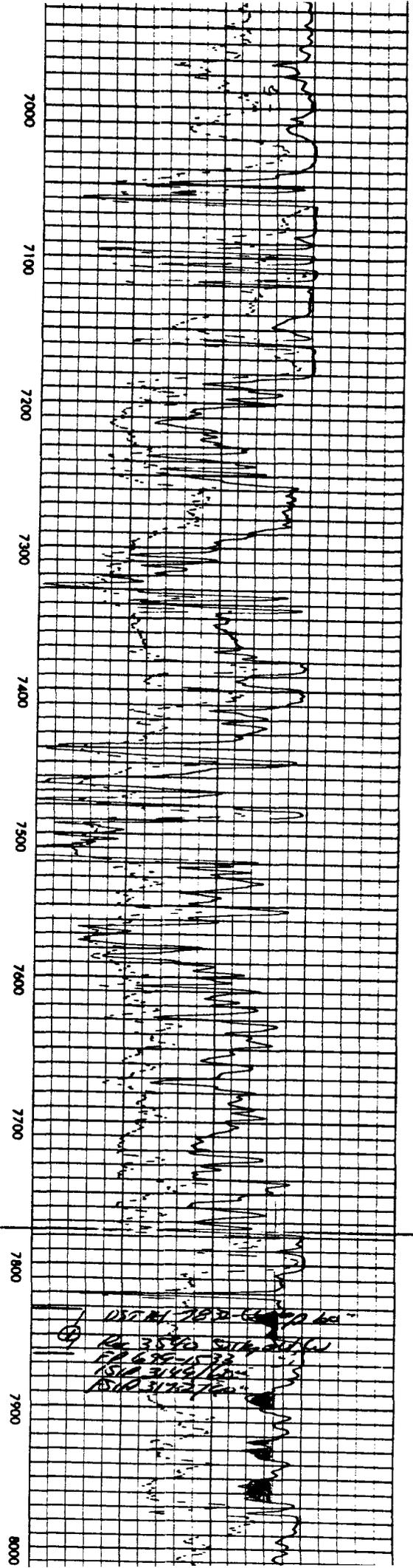
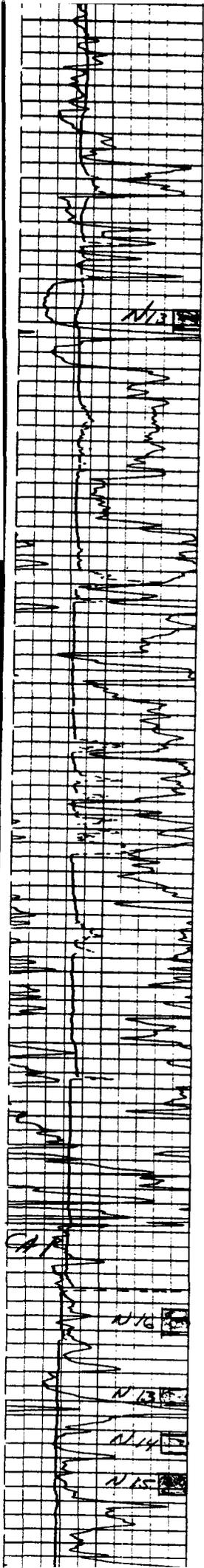
IX. Proposed Stimulation Program

A stimulation program is planned that may include:

Injection of 10,000 Gallons of 15% N.E. Acid at 4 to 5
BPM.

SECTION X

Copy of well log



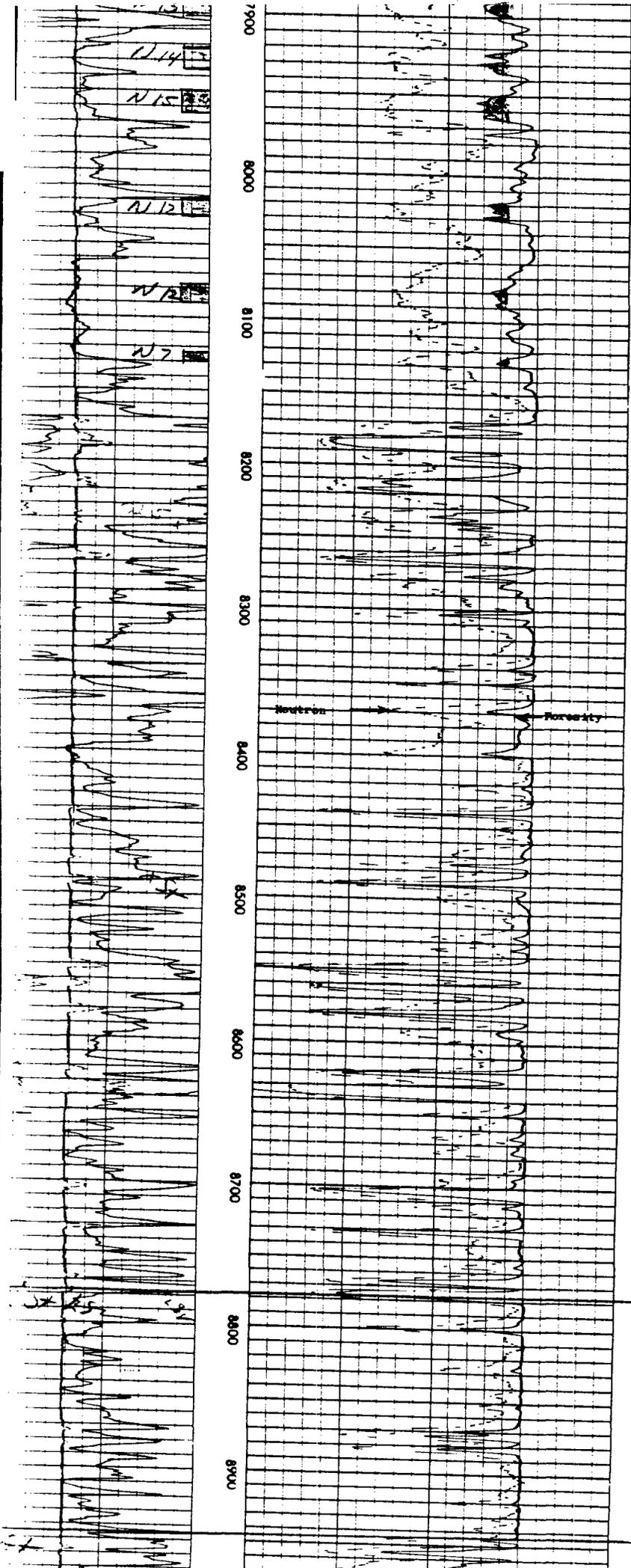
7000
7100
7200
7300
7400
7500
7600
7700
7800
7900
8000

N13

N13

N14

N15



Neutron Porosity

SECTION XI

Chemical Analysis

HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION
ARTESIA, NEW MEXICO 88210

LABORATORY WATER ANALYSIS

No. W 573- & W 574-8

To H & E Oil Company

Date September 21, 1985

303 First National Bank Bldg
Artesia, New Mexico 88210

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by LEO B. PRATER

Date Rec. September 20 1985

Well No. _____ Depth _____ Formation Fresh Water

County Eddy Field Sec A-19-26 Curio Shop Source Water wells, Sec 9-19-26 John Sherman

Resistivity 8.7 @ 70° 9.2 @ 70°

Specific Gravity 1.00 @ 60° 1.00 @ 60°

pH 7.0 6.7

Calcium (Ca) 670 610 *MPL

Magnesium (Mg) 170 200

Chlorides (Cl) Less than 1000 Less than 1000

Sulfates (SO₄) Heavy Heavy

Bicarbonates (HCO₃) 180 120

Soluble Iron (Fe) Nil Nil

Remarks:

*Milligrams per liter

Warren Lane
Respectfully submitted,

Analyst: Warren Lane Field Engr.
cc:

HALLIBURTON COMPANY

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.

HALLIBURTON DIVISION LABORATORIES
 HALLIBURTON SERVICES
 MIDLAND DIVISION
 ARTESIA, NEW MEXICO 88210
 LABORATORY WATER ANALYSIS

W143, W144,
 No. W145, & W146-83

To Wallace Oil & Gas, Inc.
50 Penn Place, Suite 850
Oklahoma City, OK 73118

Date December 19, 1983

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. _____

Well No. State #1C Depth 7850' Formation Cisco/ Canyon

County _____ Field Wildcat Source Open Hole Test

	MUD PIT	SAMPLER	
Resistivity11 @ 68°	.065 @ 68°	
Specific Gravity	1.057 @ 60°	1.127 @ 60°	
pH	6.5	7.0	
Calcium (Ca)	1,590	7,000	*MPL
Magnesium (Mg)	870	1,400	TOP RECOVERY
Chlorides (Cl)	43,000	108,000	Chl. 113,000
Sulfates (SO ₄)	Medium	Medium	Res. .065 @ 68°
Bicarbonates (HCO ₃)	300	300	BOTTOM RECOVERY
Soluble Iron (Fe)	Nil	Light	Chl. 107,000
.....			Res. .063 @ 68°
.....			
.....			

Remarks: _____ *Milligrams per liter

Warren Lane
 Respectfully submitted,

Analyst: Warren Lane, EIT
 cc:

HALLIBURTON COMPANY

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HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

ARTESIA, NEW MEXICO 88210

LABORATORY WATER ANALYSIS

No. W57 & W58-84

To Discovery Operating

Date February 7, 1984

300 N. Marienfield, Suite 100

Midland, TX 79701

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. _____

Well No. Walt Canyon 5 Fed. #1 Depth _____ Formation Cisco

County Eddy Field _____ Source Swab

Resistivity #1 .243 @ 60° #5 .240 @ 60°

Specific Gravity 1.02 1.02

pH 8.0 8.1

Calcium (Ca) 820 1,094 *MPL

Magnesium (Mg) 664 664

Chlorides (Cl) 14,000 14,000

Sulfates (SO4) Small Small

Bicarbonates (HCO3) 2,135 2,253

Soluble Iron (Fe) 250 200

Remarks: _____ *Milligrams per liter

Art Carrasco
Respectfully submitted,

Analyst: Art Carrasco - District Engineer

HALLIBURTON COMPANY

cc:

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HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

ARTESIA, NEW MEXICO 88210

LABORATORY WATER ANALYSIS

No. W601-84

To Sage Energy

Date December 4, 1984

P. O. Box 3068

Midland, TX 79701

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Danny Roberts

Date Rec. December 3, 1984

Well No. Antelope Sink #2 Depth 6300'

Formation Cisco

County _____ Field _____

Source Flow Line

Resistivity12 @ 65°

Specific Gravity 1.08 @ 60°

pH 6.9

Calcium (Ca) 17,300

*MPL

Magnesium (Mg) 1,750

Chlorides (Cl) 75,000

Sulfates (SO₄) Light

Bicarbonates (HCO₃) 300

Soluble Iron (Fe) Medium

KCl 1%

Remarks:

*Milligrams per liter

Warren Lane
Respectfully submitted,

Analyst: Warren Lane - Field Engineer

HALLIBURTON COMPANY

cc:

NOTICE

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HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

ARTESIA, NEW MEXICO 88210

LABORATORY WATER ANALYSIS

No. W164-85

To Mr. Joe Mettenet

Date February 25, 1985

Arco Oil & Gas

P. O. Box 1710

Hobbs, NM 88240

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Rocky Chambers

Date Rec. February 25, 1985

Well No. State CD #1 Depth 9100'

Formation Cisco

County Eddy Field S 22, T 18-S, R 28-E

Source Swab

Resistivity 0.17 @ 70°

Specific Gravity 1.03

pH 7.0

Calcium (Ca) 1,500

*MPL

Magnesium (Mg) 270

Chlorides (Cl) 26,000

Sulfates (SO₄) Medium

Bicarbonates (HCO₃) 1,037

Soluble Iron (Fe) Light

KCL 1/2%

Remarks:

*Milligrams per liter

Rocky Chambers
Respectfully submitted,

Analyst: Rocky Chambers - Field Engineer

HALLIBURTON COMPANY

cc:

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HALLIBURTON DIVISION LABORATORY
HALLIBURTON SERVICES
MIDLAND DIVISION
ARTESIA, NEW MEXICO 88210
LABORATORY WATER ANALYSIS

No. W611-84

To Robert Enfield
O'Brien Engineering
P. O. Box 10487
Midland, TX 79702

Date December 12, 1984

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Bill Lentz Date Rec. December 11, 1984

Well No. Douglas #1 Depth _____ Formation Cisco

County _____ Field _____ Source _____

Resistivity	<u>.52 @ 65°</u>	
Specific Gravity	<u>1.01 @ 60°</u>	
pH	<u>6.0</u>	
Calcium (Ca)	<u>1,800</u>	<u>*MPL</u>
Magnesium (Mg)	<u>900</u>	
Chlorides (Cl)	<u>12,000</u>	
Sulfates (SO ₄)	<u>Medium</u>	
Bicarbonates (HCO ₃)	<u>150</u>	
Soluble Iron (Fe)	<u>Light</u>	
KCL	<u>Nil</u>	

Remarks:

*Milligrams per liter

Warren Lane

Respectfully submitted,

Analyst: Warren Lane - Field Engineer
cc:

HALLIBURTON COMPANY

NOTICE

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HALLIBURTON DIVISION LABORATORIES
HALLIBURTON SERVICES
MIDLAND DIVISION
ARTESIA, NEW MEXICO 88210
LABORATORY WATER ANALYSIS

No. W123-83

To Chama Petroleum
P. O. Box 31405
Dallas, TX 75231

Date December 10, 1983

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Charles Nearburg Date Rec. December 10, 1983

Well No. South Boyd #1 Depth 7850' Formation Canyon (Bottom Zone)

County _____ Field Undesignated Source Swab

Resistivity36 @ 68°

Specific Gravity 1.042 @ 60°

pH 7.0

Calcium (Ca) 5.500 *MPL

Magnesium (Mg) 7.000

Chlorides (Cl) 31.000

Sulfates (SO₄) Medium

Bicarbonates (HCO₃) 900

Soluble Iron (Fe) Heavy

Remarks: _____ *Milligrams per liter

Warren Lane
Respectfully submitted,

Analyst: Warren Lane, EIT

HALLIBURTON COMPANY

cc:

NOTICE

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VII
5

UNICHEM INTERNATIONAL

601 NORTH LEECH

P.O. BOX 1499

HOBBS, NEW MEXICO 88240

COMPANY : H AND S OIL
DATE : 12-21-84
FIELD, LEASE & WELL : LATTION #1
SAMPLING POINT: WELLHEAD
DATE SAMPLED : 12-17-84

SPECIFIC GRAVITY = 1.135
TOTAL DISSOLVED SOLIDS = 201652
PH = 6.45

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	133.	2672
MAGNESIUM	(MG)+2	26.6	324.
SODIUM	(NA).CALC.	3257.	74894.
ANIONS			
BICARBONATE	(HCO3)-1	8.4	512.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	109.	5250
CHLORIDES	(CL)-1	3300	<u>118000</u>
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		2.5
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = 3.825

SCALING INDEX	TEMP
	30C
	86F
CARBONATE INDEX	.447
CALCIUM CARBONATE SCALING	LIKELY
CALCIUM SULFATE INDEX	10.9
CALCIUM SULFATE SCALING	LIKELY

IONIC STRENGTH IS TOO HIGH FOR CARBONATE METHOD

UNICHEM INTERNATIONAL

601 NORTH LEECH

P.O. BOX 1499

HOBBS, NEW MEXICO 88240

COMPANY : BLANCO ENGINEERING
 DATE : 7-19-84
 FIELD LEASE & WELL : SCRIPPS #4M
 SAMPLING POINT: WELLHEAD
 DATE SAMPLED : 7-17-84

SPECIFIC GRAVITY = 1.133
 TOTAL DISSOLVED SOLIDS = 196954
 PH = 6.21

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	140	2605.
MAGNESIUM	(MG)+2	120	1452.
SODIUM	(NA).CALC.	3153.	72048.
ANIONS			
BICARBONATE	(HCO3)-1	10	610.
CARBONATE	(CO3)--2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)--2	83.9	4031.
CHLORIDES	(CL)-1	3500	116000 116000
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)	NOT RUN	
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = 3.802

SCALING INDEX	TEMP
CARBONATE INDEX	30C
CALCIUM CARBONATE SCALING	84F
	.298
	LIKELY
CALCIUM SULFATE INDEX	-1.3
CALCIUM SULFATE SCALING	UNLIKELY

IONIC STRENGTH IS TOO HIGH FOR CARBONATE METHOD

UNICHEM INTERNATIONAL

601 NORTH KEECH

P.O. BOX 1199

HOBBS, NEW MEXICO 88240

COMPANY : BIANCO ENGINEERING
 DATE : 7-19-84
 FIELD LEASE & WELL : WILLIAMS #8
 SAMPLING POINT: WELLHEAD
 DATE SAMPLED : 7-17-84

SPECIFIC GRAVITY = 1.135
 TOTAL DISSOLVED SOLIDS = 201607
 PH = 6.31

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	126.	2538.
MAGNESIUM	(MG)+2	143.	1742.
SODIUM	(NA).CALC.	3217.	73978.
ANIONS			
BICARBONATE	(HCO3)-1	9.8	597.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	78.0	3750
CHLORIDES	(CL)-1	3400	237000 119000
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)	NOT RUN	
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = 3.903

SCALING INDEX

TEMP

CARBONATE INDEX
 CALCIUM CARBONATE SCALING

30C
 86F
 .379
 LIKELY

CALCIUM SULFATE INDEX
 CALCIUM SULFATE SCALING

-9.6
 UNLIKELY

IONIC STRENGTH IS TOO HIGH FOR CARBONATE METHOD

SECTION XII

Affirmative Statement

Harris Petroleum Consultants

H & S Oil Company
First National Bank
Suite 303
Artesia, New Mexico

Dear Sir:

I have examined all available geologic and engineering data in and around Section 17-T19S-R26E Eddy County New Mexico. I have found no evidence of any open faults or hydrologic connection between your proposed injection zone, 7777-8200 (Canyon Formation) and any underground source of drinkeng water.



Randall L. Harris
Geologist

SECTION XIII

Proof of Notice

XIII. Proof of Notice

Owner of surface - All of section 17, less 18.287 acres- Santa Fe Land Improvement Company, 900 Polk Street Room 500, Amarillo, Texas 79101
18.287 Acres - State Highway Commission

Leasehold operator within $\frac{1}{2}$ mile radius

Section 17 - El Paso Natural Gas Company, Box 1492, El Paso, Texas 79978
Santa Fe Land Improvement Company, 900 Polk Street, Room 500, Amarillo, Texas 79101

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 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 New Mexico Oil Conservation Division, P.O. Box 2088, Santa, NM 87501, within 15 days.

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

NOTICE: SURFACE OWNERS OF OFFSET OPERATORS MUST FILE ANY OBJECTION OR REQUESTS FOR HEARING OF ADMINISTRATIVE APPLICATION WITHIN 15 DAYS FROM THE DATE THIS APPLICATION WAS MAILED TO THEM.

A
R.L.H
December

SALT WATER INJECTION WELL AGREEMENT

THIS AGREEMENT, made this 17th day of ~~September~~ December, 1985, between SANTA FE LAND IMPROVEMENT COMPANY, a Delaware corporation, 12850 Spurling Drive, Suite 100, Dallas, Texas, 75230 ("Owner"), and H & S OIL COMPANY, a partnership composed of Rupert L. Heinsch and Herbert R. Spencer, Suite 303, First National Bank Building, Artesia, New Mexico, 88210 ("Operator"),

W I T N E S S E T H:

A. Owner is the owner of the surface and minerals under, among other lands, the following lands in Eddy County, New Mexico:

Township 19 South, Range 26 East, N.M.P.M.

Section 17: NE/4 SE/4

containing 40 acres, more or less,

and which said lands (including the surface and underlying oil and gas) will hereinafter be referred to as the "Property."

B. The oil and gas estate is unleased, and Owner is the owner of the Santa Fe Land and Improvement Company No. 1 Well located 660 feet from the East line and 1,980 feet from the South line of said Section 17, drilled to a total depth of 9,500 feet and plugged and abandoned on November 11, 1971. The said well and all casing located therein will hereinafter be referred to as the "Subject Well."

C. The Subject Well is not capable of producing oil or gas in commercial quantities and the parties have agreed that the Subject Well may be used for the storage, removal, disposal and transportation of salt water and other liquid waste, upon the terms and conditions hereinafter provided.

NOW, THEREFORE, in consideration of the sum of One Dollar and other good and valuable consideration paid and to be paid by Operator to Owner, the receipt and sufficiency of which are hereby acknowledged, it is agreed as follows:

1.1 Conditions Precedent. The provisions of Paragraphs 2, 3, and 5 through 7 of this agreement are subject to the satisfaction or waiver in writing by Operator of the conditions precedent following:

a) The Oil Conservation Commission of New Mexico shall have issued an order to Operator authorizing the injection of salt water into the Subject Well.

b) Operator shall have obtained valid rights-of-way for a salt water pipeline from its oil and gas wells in Section 23, Township 18 South, Range 26 East, Eddy County, New Mexico, to the Subject Well.

c) Operator shall have re-entered and cleaned out the Subject Well down to the ~~Cisco~~ Canyon formation and made a good faith determination that up to 4,200 barrels of water per day can be injected into the ~~Cisco~~ Canyon formation at a maximum pressure of 1,580 psi. If Operator is unable to obtain such favorable determinations, Operator, at its expense, shall plug and abandon the Subject Well in accordance with the applicable regulatory requirements.

1.2 The risk and expense of satisfying the three conditions in 1.1 will be borne by Operator.

g
p
r
h
May
March

1.3 If the conditions in 1.1 are not satisfied or waived by ~~March~~ ^{May} 31, 1986, this agreement shall be of no further force and effect unless said time is extended in writing by both parties.

2.1 Consideration. Promptly after satisfaction or waiver of the conditions in 1.1, Operator shall give written notice thereof and pay to Owner the cash sum of \$10,000. The date of mailing the notice is the "Closing Date."

2.2 Operator shall also pay to Owner 1¢ per barrel for each barrel of salt water injected by Operator into the Subject Well. On or before the 20th day of each month, Operator shall make payment to Owner for the number of barrels of salt water injected into the Subject Well during the preceding month.

2.3 Operator shall maintain at its offices, Suite 303, First National Bank Building, Artesia, New Mexico 88210, a daily record of the volume, character and identity of all materials, salt water and other liquid wastes, injected or disposed of in and through the Subject Well. Such records shall be maintained throughout the life of this lease and Owner and its representatives shall have the right during normal business hours to inspect such books and records of Operator relating to the nature, kind and number of barrels of salt water and other liquid wastes disposed of in the Subject Well.

3. Injection Well and Right-Of-Way

3.1 Owner hereby sells and delivers unto Operator the Subject Well and the exclusive right to construct, maintain and operate facilities on a ground site 200' x 200' surrounding the Subject Well for the perpetual storage, injection and disposal of salt water and other liquid waste products. The facilities shall be constructed in a good and workmanlike manner in accordance with the standards of the industry, and in full compliance with all applicable laws, rules, orders, regulations and ordinances of all regulatory bodies having jurisdiction. The foregoing conveyance is without warranty, express or implied, including any implied warranty of fitness for a particular purpose which are expressly negated.

3.2 Owner grants Operator an easement and right-of-way over, through and across the Property for ingress and egress to the Subject Well. The easement and right-of-way shall include but not be limited to the right to construct, maintain and operate a road, power lines, pipelines and other facilities as will promote the use and enjoyment of the Subject Well, including but not limited to facilities to transport, inject and dispose of salt water and other liquid waste products and to supply energy and other power to the Subject Well. This grant also includes the right to construct, maintain, repair, remove and replace the pipeline and power line, and Operator shall be entitled to intermittent use of so much of the surface as is reasonably required for the exercise of such right. In addition to the other consideration provided for herein, Operator shall pay to Owner an amount equal to the going rate per rod (right-of-way and damages) for all roads, power lines, pipelines and other appurtenances constructed upon the lands of Owner in connection with this paragraph 3.2. All payments under this paragraph and those provided for in paragraphs 2.1 and 2.2 shall be paid to Owner at 12850 Spurling Drive, Suite 100, Dallas, Dallas County, Texas, 75230.

4. Operator has and does hereby agree to indemnify and hold Owner, its successors or assigns, harmless from all claims or demands of whatsoever nature arising directly or indirectly out of Operator's operations upon said Section 17 and in particular its operations of the Santa Fe Land and Improvement Company No. 1 Well as a salt water and liquid waste disposal well. Operator expressly agrees to indemnify and hold Owner harmless against claims or demands (including reasonable attorneys fees) arising directly or indirectly out of its testing, conversion and use of

said well and its operations upon said Section 17 pursuant to the terms of this agreement and relating to any claim for damages or injury to any person or property, including any zone or formation capable of producing oil, gas or other minerals or any claim of damage to the fresh water aquifer. The foregoing indemnity shall also extend to any claims or demands for surface or crop damages of whatsoever nature and in this regard, Operator has and does hereby agree that at such time as it abandons the use of the Subject Well for disposal well purposes, or its testing thereof pursuant to Paragraph 1.1(c) hereof, it will clean up the site and restore the premises to their original condition as nearly as practicable. Upon such abandonment, Operator, at its sole cost, risk and expense shall be responsible for the plugging of the Subject Well in full compliance with all laws, rules, regulations, orders and ordinances of all regulatory bodies having jurisdiction.

Operator shall furnish Owner, at its request, copies of all well completion information and correspondence with regulatory bodies having jurisdiction evidencing full compliance with all applicable laws, orders, rules, regulations and ordinances of the regulatory bodies having jurisdiction.

5. Term. This agreement shall commence on the Closing Date and continue thereafter until one year after Operator discontinues injecting salt water into the Subject Well, or until such earlier date as may be elected by Operator. At termination, Operator shall plug and abandon the Subject Well in accordance with applicable regulatory authorities.

6. Notices. All notices required or permitted by this agreement shall be deemed to have been properly given if sent by regular mail, postage prepaid, or by Western Union telegram, with charges prepaid, addressed to the parties hereto at the addresses set forth in the caption hereof, unless any party or any successor in interest to any party shall have designated in writing another address.

7. Binding Effect. This agreement shall be binding upon and inure to the benefit of the successors and assigns of the parties hereto.

EXECUTED on the day and year first above written.

H & S OIL COMPANY

By Rupert L. Heinsch
Rupert L. Heinsch, Partner

ATTEST:

SANTA FE LAND IMPROVEMENT COMPANY

By Thomas F. ...
ASST. Secretary

By ... J. ...
Vice President

STATE OF NEW MEXICO)
COUNTY OF EDDY)

The foregoing instrument was acknowledged before me this 17th day of December, 1985, by RUPERT L. HEINSCH, Partner, on behalf of H & S OIL COMPANY, a partnership.

My Commission Expires: October 5, 1987
Thomas E. Foster
Notary Public

STATE OF CALIFORNIA)
)
COUNTY OF SAN FRANCISCO)

The foregoing instrument was acknowledged before me this 17th
day of January, 1986, by John F. Salmon,
President of SANTA FE LAND IMPROVEMENT COMPANY, a Delaware
corporation, on behalf of said corporation.

My Commission Expires:
11-18-88

Lisa A. Keisner
Notary Public



P 180 950 953

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

★ U.S.G.P.O. 1984-446-014

PS Form 3800, Feb. 1982

Sent to El Paso Natural Gas Co.	
Street and No. Box 1492	
P.O., State and ZIP Code El Paso Texas 79978	
Postage	\$ 158
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	75
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$ 303
Postmark or Date	JAN 9 1986 U-PO

PS Form 3871, July 1983 447-945

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- 1. Show to whom, date
- 2. Restricted Delivery

3. Article Addressed to
El Paso Natural Gas Co.
Box 1492
El Paso, Texas 79978

4. Type of Service Article Number

Registered Insured
 Certified CO
 Extra Mail

Always check space for return address
DATE DELIVERED

5. Signature of Addressee

6. Signature of Addressee

7. Date of Delivery

DOMESTIC RETURN RECEIPT

P 180 950 952

RECEIPT FOR CERTIFIED MAIL

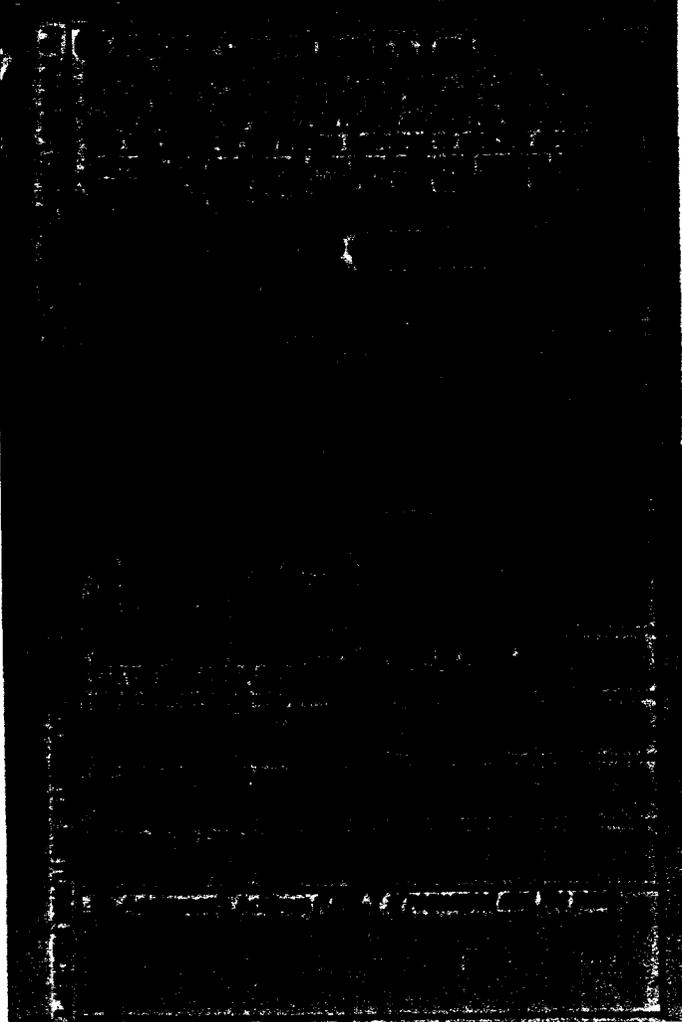
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

★ U.S.G.P.O. 1984-446-014

PS Form 3800, Feb. 1982

Sent to Santa Fe Land Improvement Co.	
Street and No. 900 Polk St - Room 500	
P.O., State and ZIP Code Amarillo Texas 79101	
Postage	\$ 158
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$ 303
Postmark or Date	JAN 9 1986 U-PO



P 180 950 954

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

★ U.S.G.P.O. 1984-446-014

PS Form 3800, Feb. 1982

Sent to	Joe L. Cox
Street and No.	Queen Route
P.O., State and ZIP Code	Carlsbad nm 88220
Postage	\$158
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$303
Postmark or Date	JAN 9 1986 USPO

PS Form 3811, July 1983 447-945

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date [redacted]
- Restricted Delivery.

3. Article Addressed to:
Joe L. Cox
Queen Route
Carlsbad nm 88220

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured	P180 950 954
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X [Signature]
6. Signature - Agent
X
7. Date of Delivery
1-11-86
8. Addressee's Address (ONLY if requested and fee paid)
Queen Rt
Carlsbad N.M.

P 180 949 927

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

★ U.S.G.P.O. 1984-446-014

PS Form 3800, Feb. 1982

Sent to	Dene Floydybee
Street and No.	Route 1
P.O., State and ZIP Code	Fall River Kansas
Postage	\$141
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$286
Postmark or Date	JAN 10 1986

PS Form 3811, July 1983 447-945

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
DENE FLOYDYBEE
ROUTE 1
FALL RIVER, KANSAS 66701

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured	DIR0949927
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X [Signature]
6. Signature - Agent
X
7. Date of Delivery
1-13-86
8. Addressee's Address (ONLY if requested and fee paid)

P 180 950 955

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, Feb. 1982

★ U.S.G.P.O. 1984-446-014

Sent to WINNIE FLOYD HUGHES	
Street and No. 317 NORTH MAPLE	
P.O., State and ZIP Code CARLSBAD, NM 88220	
Postage	\$ 141
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$286
Postmark of Date	JAN 10 1986 UCCP

PS Form 3811, July 1983 447-945

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- 1. Show to whom, date and address of delivery.
- 2. Restricted Delivery.

3. Article Addressed to:
WINNIE FLOYD HUGHES
317 NORTH MAPLE
CARLSBAD, NM 88220

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured	P 180 950 955
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X Winnie Floyd Hughes

6. Signature - Agent
X

7. Date of Delivery
1/14/86

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

DOMESTIC RETURN RECEIPT

P 180 950 956

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, Feb. 1982

★ U.S.G.P.O. 1984-446-014

Sent to ADA FLOYD GRUHLKEY	
Street and No. 2113 VAN BUREN	
P.O., State and ZIP Code AMARILLO TEXAS 79100	
Postage	\$ 141
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$286
Postmark of Date	JAN 10 1986 AMARILLO

PS Form 3811, July 1983 447-945

SENDER: Complete items 1, 2, 3 and 4.
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
ADA FLOYD GRUHLKEY
2113 VAN BUREN
AMARILLO, TEXAS 79100

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured	P 180 950 956
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee
X Ada Gruhlkey

6. Signature - Agent
X

7. Date of Delivery
1/17/86

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

DOMESTIC RETURN RECEIPT

H & OIL COMPANY
First National Bank Bldg.
Suite No. 303
Artesia, New Mexico 88210

CLAIM CHECK NO. **67111**
 HOLD
 1ST NOTICE
 2ND NOTICE
 RETURN

PS Form 3800, Feb. 1982

U.S.G.P.O. 1984-446-014

P 180 950 957

RECEIPT FOR CERTIFIED MAIL
 NO INSURANCE COVERAGE PROVIDED
 NOT FOR INTERNATIONAL MAIL
 (See Reverse)

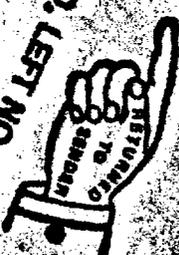
Recd by RICHARD I FLOYD	
Street and No ROUTE 2 BOX 131	
P.O., State and ZIP Code BLOUNTSVILLE, ALABAMA 35031	
Postage	\$1.11
Certified Fee	75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$2.86
Postage in (meter)	
Postage in (stamp)	

CERTIFIED

P 180 950 957

MAIL

MOVED, LEFT NO ADDRESS



~~RICHARD I FLOYD
 ROUTE 2 BOX 131
 BLOUNTSVILLE, ALABAMA 35031~~

*Moved left
 no return
 P 180 950 957*

**RETURN RECEIPT
 REQUESTED**

CLAIM CHECK NO. **836693**

HOLD

DATE

1ST NOTICE

2ND NOTICE

RETURN **1-27-81**

Deposited from PS Form 3849-A Oct. 1980



Affidavit of Publication

Copy of Publication

No. 11398

STATE OF NEW MEXICO,
County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for 1 consecutive weeks on the same day as follows:

First Publication January 20, 1986

Second Publication

Third Publication

Fourth Publication

and that payment therefore in the amount of \$ has been made.

Subscribed and sworn to before me this 22nd day

of January, 1986

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1987

LEGAL NOTICE

Notice is hereby given that pursuant to the New Mexico Oil Conservation Division regulations, the following application for authorization of a Salt Water Injection Well has been submitted for approval to the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501. H&S Oil Company, Herbert R. Spencer, Partner, Suite 303 First National Bank Bldg., Artesia, New Mexico 88210, (505) 746-8658, proposes to re-enter for injection of produced water into the Canyon zone, the Mountain States Petroleum Corporation, Santa Fe Land Improvement Company Well #1, located 660' FEL and 1900' FSL of Section 17, Township 18S, Range 26E, Eddy County, New Mexico. Injection will be into the non-productive Canyon Formation between 7777' and 8150'. The maximum injection rate will be approximately 4000 barrels of water per day, and the maximum injection pressure will be approximately 1630 pounds per square inch. Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division at the above address within 15 days. Published in the Artesia Daily Press, Artesia, N.M., Jan. 20, 1986. Legal No. 11398

APPLICATION FOR AUTHORIZATION TO INJECT

Santa Fe Land Improvement Company #1