

C. 2. 8816

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? yes no
- II. Operator: C & C Operating Corp.
Address: P. O. Box 6016 Hobbs, NM 88241
Contact party: Joe D. Ramey Phone: 392-6525
- 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: Joe D. Ramey Title Consultant

Signature: *Joe D. Ramey* Date: 1/13/86

* 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.

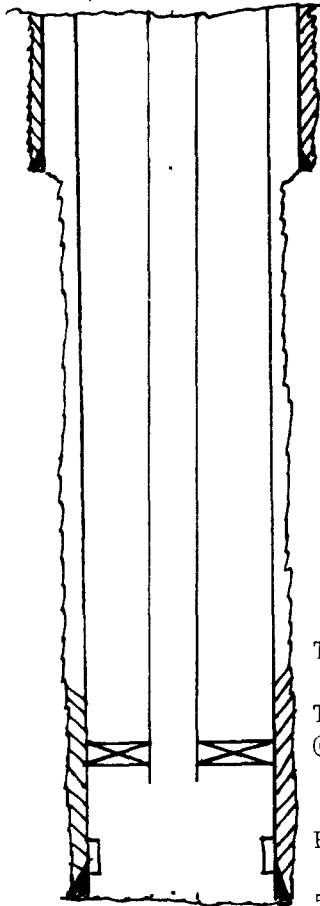
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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.

INJECTION WELL DATA SHEET

| | | | | |
|-----------------------|------------------|--------------|----------|---------|
| C & C Operating Corp. | | Lea OR State | | |
| OPERATOR | | LEASE | | |
| 3 | 660' S & E | 12 | 18 South | 36 East |
| WELL NO. | FOOTAGE LOCATION | SECTION | TOWNSHIP | RANGE |

Schematic



8 5/8" @ 360'
w/240 sxs.

TOC 3500'

Tubing & pkr.
@ 4833'

Perf. 4942-86

5 1/2" @ 5202'
w/ 295 sxs.

Tabular Data

Surface Casing

Size 8 5/8" " Cemented with 250 sx.
TOC Surface feet determined by Circulated
Hole size 12 1/4"

Intermediate Casing

Size _____ " Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string

Size 5 1/2 " Cemented with 295 sx.
TOC 3500' feet determined by Temp. Survey
Hole size 7 7/8"
Total depth 5202'

Injection interval

4942 feet to 4986 feet
(perforated or ~~open hole~~, indicate which)

Tubing size 2 3/8" lined with Salta PVC set in a
(material)
Guiberson Tension packer at 4900 feet
(brand and model)
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation San Andres
- Name of Field or Pool (if applicable) Arkansas Junction San Andres
- Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? Oil Well
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Arkansas Junction Queen Gas Pool @ around 4350'

WELLS WITHIN AREA OF REVIEW

Cavalcade Oil Corp.

Silver State No. 1

330' N & 1980' W

Section 13, Township 18 South, Range 36 East

8 5/8" casing @ 1322' with 625 sxs. Circulated 135 sxs. 12 1/4" hole.

4 1/2" casing @ TD 5175' with 700 sxs. Calculated top of cement 2175'.
7 7/8" hole.

Perforated in San Andres and completed as an oil well. 4912'-5066'
August production-303 bbls. oil, 462 bbls. water.

Cavalcade Oil Corp.

Golden State No. 1

660' S & 1980' W

Section 12, Township 18 South, Range 36 East

8 5/8" casing @ 1350' with 425 sxs. Circulated 136 sxs. 11" hole.

5 1/2" casing @ Td 5227' with 675 sxs. Calculated top of cement 1900'.
7 7/8" hole.

Perforated in San Andres 4905'-5074' and completed as an oil well.
Temporary abandoned San Andres by setting bridge plug @ 4875'.
Perforated Queen 4382'-4394'. Tested 40 MCF/Day. Is now shut-in.

C & C Operating Corp.

Lea OR State No. 2

560' S & 1980' E

Section 12, Township 18 South, Range 36 East

8 5/8" casing @ 360' with 240 sxs. Cement circulated. 12 1/4" hole.

5 1/2" casing @ TD 5210' with 295 sxs. Top cement 3700' by Temper-
ature Survey. 7 7/8" hole.

Perforated in San Andres 4916'-5066' and completed as an oil well.
August production-130 bbls. oil, 380 bbls. water

PLUGGED AND ABANDONED
WITHIN AREA OF REVIEW

Axtec Oil & Gas Co.

Gulf State No. 1
1980' S & E

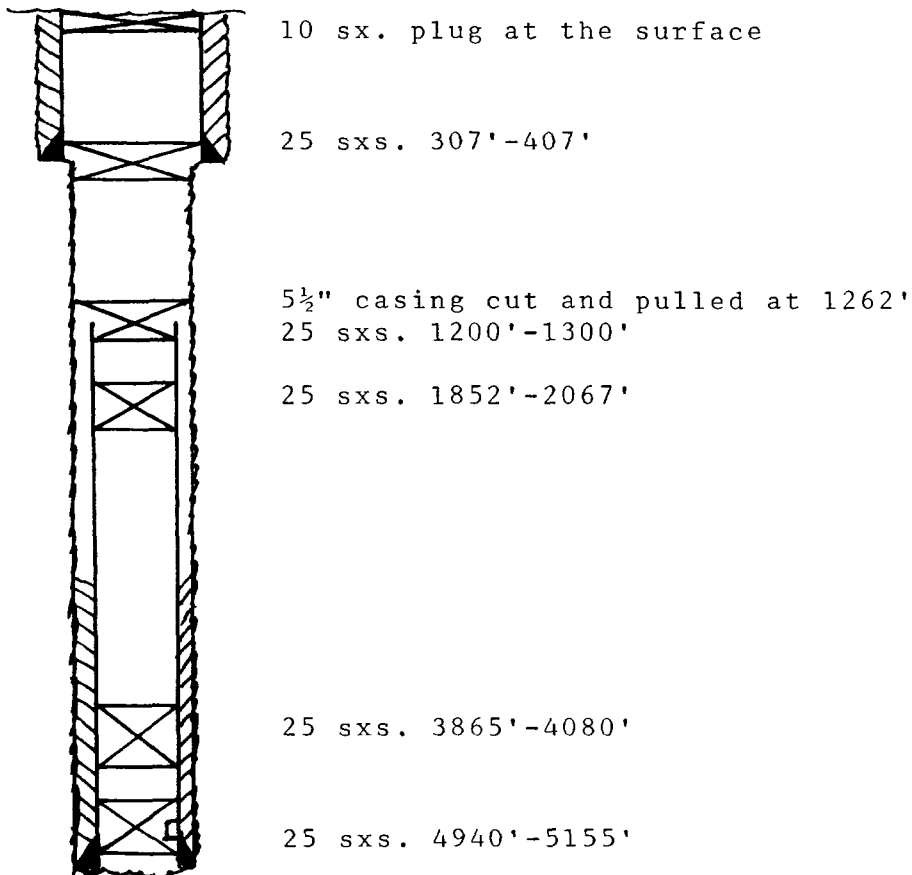
Section 12, Township 18 South, Range 36 East

8 5/8" Casing set @ 357' with 240 sxs., circulated 40 sxs.
12 1/4" hole.

5 1/2" casing set @ 5200' (Total depth) with 325 sxs. Top of
cement @ 3200' by Temperature Survey. 7 7/8" hole

Perforated 4992'-5104' and originally completed as an oil
well in the Arkansas Junction San Andres Pool.

Plugged & abandoned as illustrated below:



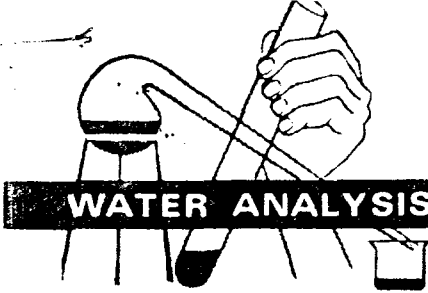
C & C Operating Corp. will operate the Lea OR State No. 3 disposal system as a closed system. Only produced water from the Arkansas Junction San Andres Pool will be injected into the well. The initial volume will be 20 bbls. per day with an anticipated maximum volume of 100 bbls. per day. The well will initially accept fluid on a vacuum and the maximum injection pressure should be 500 psi. However, a maximum pressure for the well of 988 psi is requested. Injection will be into the San Andres producing formation. The small volume injected will probably not affect the producing ability of surrounding producing wells and could give the operator an indication of the potential for future water-flood possibilities.

The San Andres in the area is predominately dolomite with some sand stringers. The formation reacts well to acid treatment and the perforations in the injection well have been treated with 100 gals. of acid. The top of the San Andres is around 4750 feet and has a total thickness of around 730 feet. Well logs have been previously submitted to the Division.

After examining the available engineering and geological data it is concluded that there is no evidence of open faulting or any other hydrologic connection between the disposal zone and the Ogallala fresh water source of drinking water in the area. The depth to the base of the Ogallala in the area is around 290 feet. Analysis from several fresh water wells in the area is attached to this application.

Treated oil has been pumped into the annular space above the packer and a pressure guage will be installed to monitor for tubing or packer leakage.

Copies of this application have been forwarded to the surface owner and lessee and to all leasehold operators within one-half mile of the injection well, list attached.



WATER ANALYSIS REPORT



BOX 4513
ODESSA, TEXAS 79760

TECH SERVICE LABORATORY: Odessa, Texas Phone (915) 337-0055 & 563-0863
RESEARCH LABORATORY: Houston, Texas Phone (713) 431-2561
PLANT: Odessa, Texas Phone (915) 337-0055

REPORT FOR Patrick Gray DATE SAMPLED 12-26-85
 CC Skidmore DATE REPORTED 12-26-85
 CC _____ FIELD, LEASE, OR WELL Fresh water
 CC _____ COUNTY _____ STATE _____
 COMPANY General Petroleum FORMATION _____
 ADDRESS _____ DEPTH _____
 SERVICE ENGINEER Cecil Brumley SUBMITTED BY _____

CHEMICAL ANALYSIS (AS PARTS PER MILLION)

| Chemical Component | Field, Lease, or Well | | | | |
|--------------------------------------|---|---|--|---|--|
| | <u>NE 1/4 NE 1/4 SE 1/4</u> <u>527 T19 R36</u> #1 | <u>SE 1/4</u> <u>527 T19 R36</u> #2 | <u>NE 1/4 S3</u> <u>T19 R36</u> #3 | <u>SE 1/4</u> <u>534 T19 R36</u> #4 | |
| Chloride (Cl) | 50 | 50 | 50 | 50 | |
| Iron (Fe) | 0 | 0 | 0 | 0 | |
| Total Hardness (Ca CO ₃) | 190 | 230 | 200 | 190 | |
| Calcium (Ca) | 68 | 92 | 64 | 68 | |
| Magnesium (Mg) | 4.9 | 9.7 | 9.7 | 4.9 | |
| Bicarbonate (HCO ₃) | 232 | 183 | 195 | 207 | |
| Carbonate (CO ₃) | 0 | 0 | 0 | 0 | |
| Sulfate (SO ₄) | 41.3 | 90 | 61.2 | 57.5 | |
| Hydrogen Sulfide (H ₂ S) | 0 | 0 | 0 | 0 | |
| Specific Gravity | 1.001 | 1.001 | 1.001 | 1.001 | |
| ***** TDS | 449.3 | 445.2 | 423.4 | 438 | |
| pH Beckman [x] Strip [] | 7.4 | 7.5 | 7.5 | 7.8 | |
| Sodium Scale Index | 53.1 | 20.5 | 43.5 | 50.6 | |
| CaCO ₃ 25 F | 0.23 | 0.35 | 0.23 | 0.58 | |
| CaCO ₃ 160 F | 0.96 | 1.08 | 0.96 | 1.31 | |
| CaSO ₄ | neg. | neg. | neg. | neg. | |

OTHER DESCRIPTION, REMARKS AND RECOMMENDATIONS

REPORTED BY Joe Edwards  TITLE Tech Service

ADDRESS LIST

Conoco, Inc.
P. O. Box 460
Hobbs, NM 88240

Maralo, Inc.
P. O. Box 832
Midland, TX 79702

Elk Oil Company
P. O. Box 310
Roswell NM 88201

Cavalcade Oil Corp.
P. O. Box 16187
Lubbock, TX 79490

New Mexico State Land Office
P. O. Box 1148
Santa Fe, NM 87504-1148
Attention: Mr. Ray Graham

Snyder Ranches
P. O. Box 726
Lovington, NM 88260

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:

CONOCO INC
P.O. Box 460
HOBBS, NM 88240

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

Always obtain signature of addressee or agent and **DATE DELIVERED.**

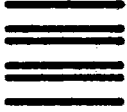
5. Signature - Addressee
X

6. Signature - Agent
X *Jane Jones*

7. Date of Delivery
1-16-86

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

DOMESTIC RETURN RECEIPT



**UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS**

Return to sender if no return address is given.
• Print your name, address, and ZIP Code in the return address.
• Attach this form to each of your parcels, and place it in the return address box on each parcel.
• Mark each parcel with a return address.
• Mark each parcel with a return address.



PENALTY FOR PRIVATE
MAIL, \$300

RETURN
TO

JOE D. RAMEY

1000 ...
...

PS Form 3811, July 1983 447-845

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.

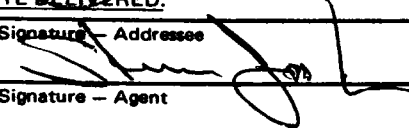
2. Restricted Delivery.

3. Article Addressed to:
 SNYDER RANCHES
 P.O. Box 726
 LOUINGTON, NM 88260

4. Type of Service: Article Number

Registered Insured
 Certified COD
 Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X 

6. Signature - Agent
 X

7. Date of Delivery
 11/17/86

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

DOMESTIC RETURN RECEIPT

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:
 MARALD INC
 P.O. Box 832
 MIDLAND, TX 79702

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

Always obtain signature of addressee or agent and **DATE DELIVERED.**

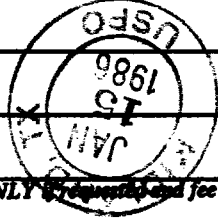
5. Signature - Addressee
[Handwritten Signature]

6. Signature - Agent
 X

7. Date of Delivery
 1-15-86

8. Addressee's Address (ONLY if requested and fee paid)
[Handwritten Signature]

DOMESTIC RETURN RECEIPT



PS Form 3811, July 1983 447-845

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:
CAVALCADE OIL CORP.
P.O. Box 16187
LUBBOCK, TX 79490

| | |
|--|----------------|
| 4. Type of Service: | Article Number |
| <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input 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 *Tonia Inad*

6. Signature - Agent
X

7. Date of Delivery

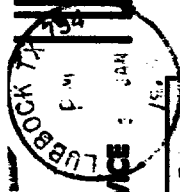
8. Addressee's Address (~~Only~~ if requested and fee paid)

~~JAN 15 1986~~
JAN 16 1986

DOMESTIC RETURN RECEIPT



PENALTY FOR PRIVATE USE \$300



UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS
Print your name, address, and ZIP Code in the space below.
• Complete forms 1, 2, 3, and 4 on the reverse.
• Attach to front of article if space permits.
• Addressing will be back of article.
• Business article "Return Receipt Requested" subject to payment.

RETURN  **TO**

JOE D RAMEY

POSTAGE WILL BE PAID BY ADDRESSEE

P.O. Box 6016

(No. and Street, Apt., Suite, P.O. Box or R.D. No.)

HOBBS, NM 88241

(City, State, and ZIP Code)