PERMIAN RESOURCES INCORPORATED

January 26, 1995

Oil Conservation Division
State of New Mexico
Energy and Mineral Department
P.O. Box 2088
State Land Office Building
Santa Fe, NM 87501

RE: Application for Authorization to Inject
Permian Resources, Inc. #21 SFPRR
West Sawyer Field
Section 27, T-9-S, R-27-E(O)
660' FSL, 1980' FEL
Lea County, New Mexico

Ladies and Gentlemen:

Enclosed please find the enclosed documents for the above-captioned lease to satisfy our Application for Authorization to Inject:

* Form C-108
* Well Data Form with Proposed Well Schematic(Attachment III)
* Map Identifying All Wells and Leases Within Area of Review(Attachment V)
* Tabulation of Well Data Within Area of Review(Attachment VI)
* Attach Data of Proposed Operation(Attachment VII)
* Geological Data of Injection Zone
* Proposed Stimulation Program
* Logging Data on Well(SNP log enclosed)
* Chemical Analysis of Fresh Water(Attachment XI)
* Statement of Examination of Geologic and Engineering Data(Attachment (XII)
* Proof of Notice to Newspaper(Attachement XIII)
* Proof of Notice Sent to Landowner(Mr. Michael Harton-Attatchment XIII)
* Sundry Notice Sent to BLM(Attachment)

If any more data is needed please free to contact me at the address or phone number below. Your help in this matter is greatly appreciated.

Sincerely,

Robert Marshall

P. O. DRAWER 590 • MIDLAND, TEXAS 79702 • (915) 685-0113

ENERGY AND MINERALS DEPARTMENT

SFPRR #21

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

Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: Permian Resources, Inc., dba Permian Partners, Inc.

Address: P. O. Box 590 Midland, TX 79702

Contact party: Robert H. Marshall Phone: 915/685-0113

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 R-8015.

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: Robert H. Marshall Title Vice President

Signature: Robert H. Marshall Date: January 17, 1995

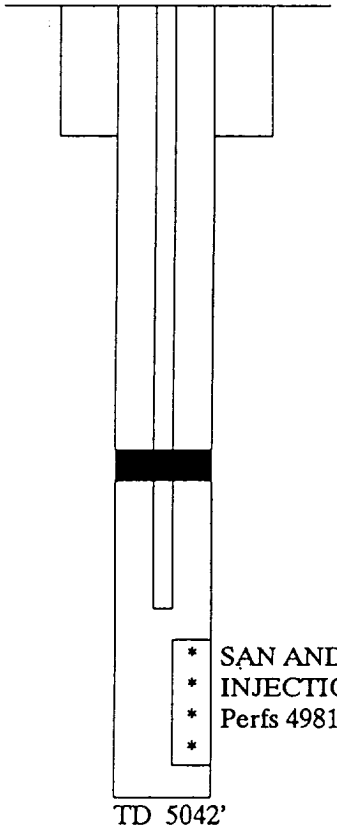
* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

# III. WEll DATA FORM

## Section A.

WELL NAME: Permian Resources, Inc., #21 SFPRR
FIELD NAME: West Sawyer(San Andres) Field
LOCATION: Sec. 27, T-9-S, R-27-E
FOOTAGE: 660' FSL, 1980' FEL, Unit "O"
COUNTY: Lea County, New Mexico



12 3/4" hole
8 5/8"(J-55, 24#)
@ 426' with 250 sacks
TOC: Circulated

DV Tool @2390'
700 sacks
TOC: Circulated

Baker Model "D" packer
@ 4900'

2 3/8" Internally plastic
coated tubing set @ 4930'

* SAN ANDRES
* INJECTION INTERVAL
* Perfs 4981-5012
*

7 7/8" hole
4 1/2"(K-55, 10.5#)
@ 5042' with 250 sacks
TOC: 3748'(est)

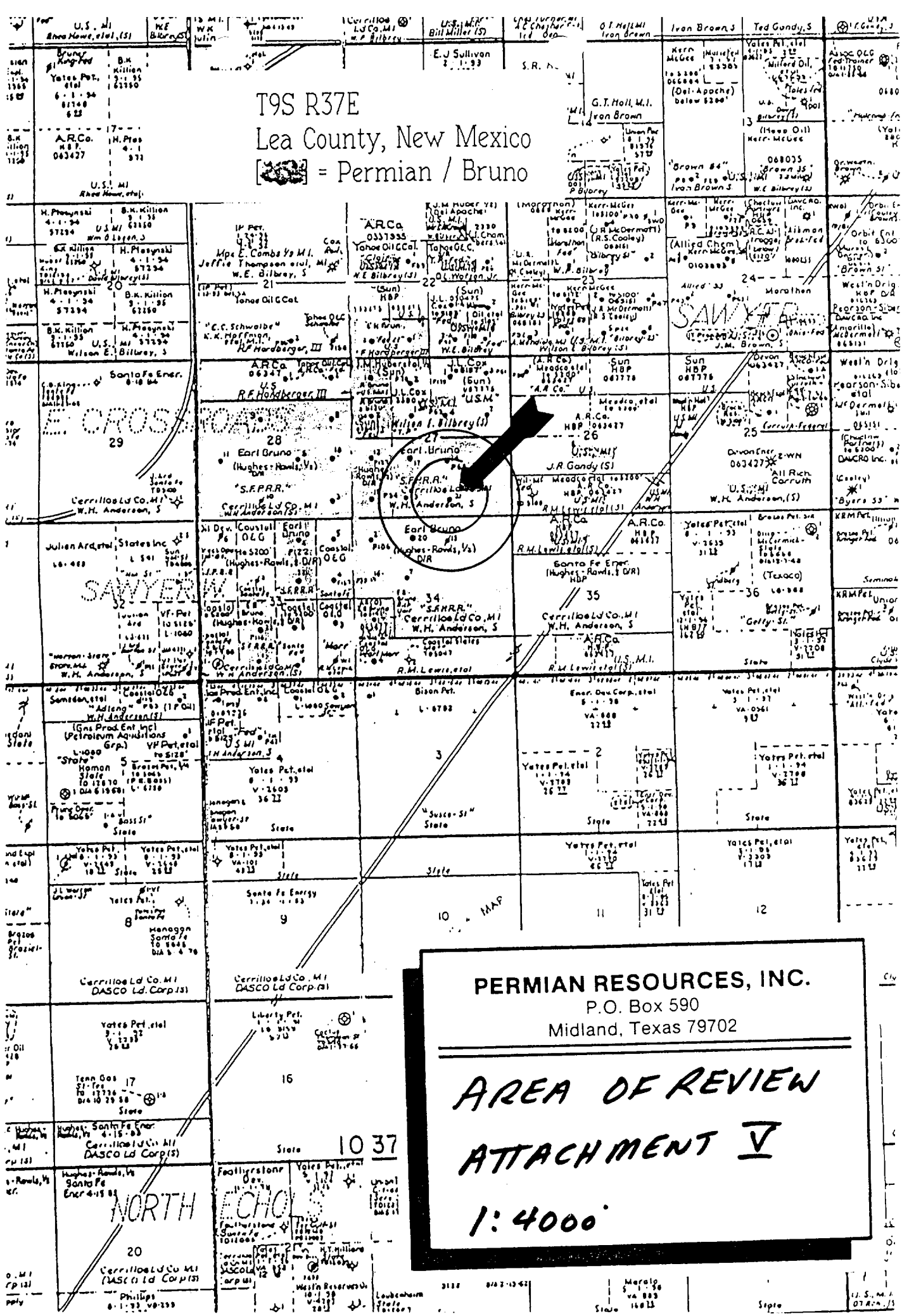
TD 5042'

## Section B.

1. Injection interval: San Andres; West Sawyer Field
2. Injection interval is perforated.
3. Well was originally drilled for oil production.
4. No other perforated zones
5. No other higher or lower oil or gas zones in the area.

# IV. PROOF OF NOTICE

1. Proof that landowner was notified(Michael Harton).
2. Proof of publication(Hobbs newspaper).


T9S R37E
Lea County, New Mexico
[ ] = Permian / Bruno
PERMIAN RESOURCES, INC.
P.O. Box 590
Midland, Texas 79702
AREA OF REVIEW
ATTACHMENT V
1:4000'

VI

## VI. TABULATION OF WELL DATA WITHIN AREA OF REVIEW.

Well #11

1980 FSL, 860 FWL, Section 27, T-9-S, R-37-E(M)
TD 5025'
Completed 11/70, IP 21 BOPD
Perfs 4928-4998
Current Status: Producer
8 5/8" @ 404 with 325 sacks
4 1/2" @ 5025' with 250 sacks

Well #13

1780' FWL, 660' FSL, Section 27, T-9-S, R-37-E(N)
TD 5032'
Completed 12/71, IP 94 BOPD
Perfs 4974-5000(San Andres)
Current Status: Producer
8 5/8" @ 400' with 300 sacks
4 1/2" @ 5000' with 250 sacks

Well #14

1839' FSL, 2121' FEL, Section 28, T-9S-,R-37-E(J)
TD 5125'
Completed 4/72, IP 68 BOPD
Perfs 4976-5000(San Andres)
Current Status: Producer
8 5/8" @ 407' with 325 sacks
4 1/2" @ 5125 with 275 sacks

Well #15(Current SWD Serving the Lease)

1780' FWL, 660' FSL, Section 27, T-9-S, R-27-E(N)
TD 5100
Completed 12/71, IP 20 BOPD
Perfs 4985-5020'(San Andres)
Current Status: Salt Water Disposal Well
8 5/8" @ 420' with 325 sacks
4 1/2" @ 5099' with 275 sacks

# TABULATION OF WELL DATA WITHIN AREA OF REVIEW.(cont.)

Well #17

1980' FWL, 1980' FSL, Section 27, T-9-S, R-27-E(K)
TD 5100
Completed 1/77, IP 50 BOPD
Perfs 4963-5023
Current Status: Producer
8 5/8" @ 420' with 300 sacks
4 1/2" @ 5033 with 1010 sacks

Well #20

1980' FWL, 660' FNL, Section 34, T-9-S, R-27-E(C)
TD 5023
Completed 12/76, IP 86 BOPD
Perfs 4978-5009
Current Status: Producer
8 5/8" @ 421 with 300 sacks
4 1/2" @ 5023 with 950 sacks

Wil Mac #1-26 Federal

660' FSL, 660' FWL, Section 26, T-9-S, R-27-E(M)
TD 5110'
Perfed 5020-40
Plugged and Abandoned 3/71
8 5/8" @ 400 with 225 sacks
4 1/2" @ 5110 with 150 sacks

VII

## VII. ATTACH DATA ON THE PROPOSED OPERATION

1. Proposed average and maximum daily rate of fluids: 500 avg; 1200 maximum.
2. Type of System: Closed
3. Proposed average and maximum injection pressure: 600 psi avg; 1000 psi maximum
4. Sources of injection fluid: Produced San Andres Water.
5. Not applicable.

## VIII. GEOLOGICAL DATA ON INJECTION ZONE

Lithologic detail: San Andres dolomite, 1500' ± thick, 4700' depth.
Drinking water sources: No water sources with less than 10,000 mg/l

## IX. PROPOSED STIMULATION PROGRAM

None anticipated but if needed up to 2,500 gallons HCl.

## X. LOGGING AND TEST DATA ON WELL

Enclosed

## XI. CHEMICAL ANALYSIS OF FRESH WATER.

Windmill located 3/4 mile north of proposed project; analysis attached

( WATER ANALYSIS - WINDMILL 1/4 MILE NORTH FROM

XI

# Permian Treating Chemicals

## WATER ANALYSIS REPORT

**SAMPLE**

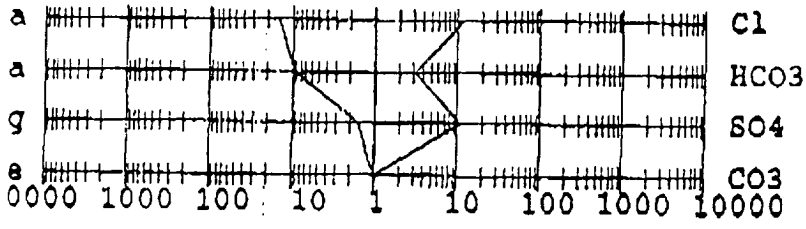
Oil Co. : Permian Resources
Lease : Sawyer
Well No.: Fresh Water
Analysis:

Sample Loc. :
Date Sampled : 23-January-1995
Attention :

**ANALYSIS**

| | | | | | |
|---|---|---|---|---|---|
| 1. | pH | | 7.100 | | |
| 2. | Specific Gravity 60/60 F. | | 1.006 | | |
| 3. | $CaCO_3$ Saturation Index | @ 80 F. | -0.013 | | |
| | | @ 140 F. | +0.687 | | |
| | **Dissolved Gasses** | | MG/L | EQ. WT. | *MEQ/L |
| 4. | Hydrogen Sulfide | | Not Present | | |
| 5. | Carbon Dioxide | | Not Determined | | |
| 6. | Dissolved Oxygen | | Not Determined | | |
| | **Cations** | | | | |
| 7. | Calcium | ($Ca^{++}$) | 180 | / 20.1 = | 8.96 |
| 8. | Magnesium | ($Mg^{++}$) | 18 | / 12.2 = | 1.48 |
| 9. | Sodium | ($Na^{+}$) (Calculated) | 328 | / 23.0 = | 14.26 |
| 10. | Barium | ($Ba^{++}$) | Not Determined | | |
| | **Anions** | | | | |
| 11. | Hydroxyl | ($OH^{-}$) | 0 | / 17.0 = | 0.00 |
| 12. | Carbonate | ($CO_3^{--}$) | 0 | / 30.0 = | 0.00 |
| 13. | Bicarbonate | ($HCO_3^{-}$) | 185 | / 61.1 = | 3.03 |
| 14. | Sulfate | ($SO_4^{--}$) | 500 | / 48.8 = | 10.25 |
| 15. | Chloride | ($Cl^{-}$) | 400 | / 35.5 = | 11.27 |
| 16. | Total Dissolved Solids | | 1,611 | | |
| 17. | Total Iron (Fe) | | 2 | / 18.2 = | 0.11 |
| 18. | Total Hardness As $CaCO_3$ | | 525 | | |
| 19. | Resistivity @ 75 F. (Calculated) | | 4.476 /cm. | | |

**LOGARITHMIC WATER PATTERN**
*meq/L.




**Calcium Sulfate Solubility Profile**

**PROBABLE MINERAL COMPOSITION**

| COMPOUND | EQ. WT. | X *meq/L = | mg/L. |
|---|---|---|---|
| $Ca(HCO_3)_2$ | 81.04 | 3.03 | 245 |
| $CaSO_4$ | 68.07 | 5.93 | 403 |
| $CaCl_2$ | 55.50 | 0.00 | 0 |
| $Mg(HCO_3)_2$ | 73.17 | 0.00 | 0 |
| $MgSO_4$ | 60.19 | 1.48 | 89 |
| $MgCL_2$ | 47.62 | 0.00 | 0 |
| $NaHCO_3$ | 84.00 | 0.00 | 0 |
| $NaSO_4$ | 71.03 | 2.84 | 202 |
| NaCl | 58.46 | 11.27 | 659 |

*Milli Equivalents per Liter

lis water is mildly corrosive due to the pH observed on analysis.
le corrosivity is increased by the content of mineral salts in solution.

ATTACH XII

PERMIAN RESOURCES INCORPORATED

January 26, 1995

Oil Conservation Division
State of New Mexico
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P.O. Box 2088
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Santa Fe, NM 87501

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West Sawyer Field
Section 27, T-9-S, R-27-E(O)
660' FSL, 1980' FEL
Lea County, New Mexico

Ladies and Gentlemen:

I have examined all geologic and engineering data available for the above-captioned field and find no evidence of open faults and other hydrologic connection between the disposal zone and any underground drinking water sources.

Sincerely,

Robert Marshall
Certified Petroleum Geologist #2528

A- ACH XIII

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

January 18, 19 95

and ending with the issue dated

January 18, 19 95

Kathi Bearden
General Manager

Sworn and subscribed to before

me this 19 day of

January, 19 95

Charlene Perrin
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**
**January 18, 1995**

Permian Resources, Inc., PO Box 590,, Midland, Texas, 79702, is applying to convert its SFPRR No. 21 well to salt water disposal in to the San Andres formation at a depth of approximately 5,000 feet. SFPRR No. 21 is in the West Sawyer (San Andres) Field, located in Unit O, Section 27, T-9S, R-37E, NMPM, Lea County, New Mexico. The expected maximum injection rate is 1,000 barrels per day at a maximum pressure of 1000 psi. Interested parties must file objections or requests for hearing with the Oil Conservation Division, PO Box 2088, Santa Fe, NM 87501 within 15 days.