C-108

APPLICATION FOR AUTHORIZATION TO INJECT WATER FOR PRESSURE MAINTENANCE

TEXACO EXPLORATION & PRODUCTION INC.
CENTRAL VACUUM UNIT
VACUUM GRAYBURG SAN ANDRES
LEA COUNTY, NEW MEXICO

February 3, 1995

February 3, 1995

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Attention: David Catanach

Re: C-108: Application for Authorization to Inject
Order R-5530- A/B/C/D, PMX-86, PMX-121
Central Vacuum Unit, Vacuum Grayburg San Andres
Texaco Exploration and Production Inc.
T-17/18-S, R-34/35-E, Lea County, New Mexico

Gentlemen:

Texaco Exploration and Production Inc. respectfully requests administrative approval for the expansion of the pressure maintenance program on the Central Vacuum Unit. As part of the 10 acre infill program, six producing and eight water injection wells will be drilled. This work will help recover additional secondary reserves that would otherwise be left in place. Administrative approval is requested so that the necessary work can be commenced as soon as possible. If there are any questions, please contact Robert McNaughton at 505- 397-0428.

Yours very truly,

Terry L. Frazier
Hobbs Area Manager

TLF/rtm

attachment

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

FORM C-108
Revised 7-1-81

CENTRAL VACUUM UNIT

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Texaco Exploration & Production Inc.

Address: P.O. Box 730, Hobbs, NM, 88240

Contact party: Robert McNaughton Phone: 505-397-0428

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-5530- A/B/C/D.

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: Terry L. Frazier Title Operating Unit Manager

Signature: T. L. Frazier/RSP Date: 1-27-95

* 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. R-5530, 8-17-77; 5530-A, 6-21-78; 5530-B, 8-30-78; 5530-C, 9-23-81, 5530-D, 3-16-83; PMX-86, 5-6-80; PMX-121, 11-17-82; Commission Hearings and applications

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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this applicati 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.

OIL CONSERVATION DIVISION
RECEIVED

179

AFFIDAVIT OF PUBLICATION 95 MAR 27 PM 8 52

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

1 weeks.
Beginning with the issue dated

March 16, 1995
and ending with the issue dated
March 16, 95
, 19

Kathi Bearden
General Manager
Sword and subscribed to before

me this 17th day of

March, 1995

Marilyn L. Riffino
Notary Public.

My Commission expires
March 24, 1998
(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
March 16, 1995

Notice is hereby given of the application of Texaco Exploration & Production Inc., Attention: Terry L. Frazier, Area Manager, P.O. Box 730, Hobbs, New Mexico, 88240, Telephone (505) 393-7191, to the New Mexico Oil Conservation Commission, Energy and Minerals Department, for approval to drill eight water injection wells for the purpose of pressure maintenance. This notice is being republished to reflect corrections to actual surveyed locations.

Unit Name: **Central Vacuum Unit, Lea County, New Mexico**

Well Numbers and Locations:

193 - Unit Letter D, 101 FNL & 534 FWL, Section 6, T18S, R35E
194 - Unit Letter C, 14 FNL & 1917 FWL, Section 6, T18S, R35E
199 - Unit Letter E, 1372 FNL & 584 FWL, Section 6, T18S, R35E
200 - Unit Letter C, 1236 FNL & 1875 FWL, Section 6, T18S, R35E
201 - Unit Letter G, 1360 FNL & 1973 FEL, Section 6, T18S, R35E
206 - Unit Letter E, 2509 FNL & 536 FWL, Section 6, T18S, R35E
207 - Unit Letter F, 2500 FNL & 1825 FWL, Section 6, T18S, R35E
244 - Unit Letter B, 10 FNL & 1930 FEL, Section 6, T18S, R35E

The injection formation is **Vacuum Grayburg San Andres** at a depth of 4300 feet below the surface of the ground. Expected maximum injection rate is 1500 barrels per day, and expected maximum initial injection pressure is 900 pounds per square inch. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, within fifteen (15) days of this publication.

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

1 weeks.
Beginning with the issue dated

March 16, 1995
and ending with the issue dated
March 16, 95
, 19

Kathi Bearden
General Manager
Sword and subscribed to before

me this 17th day of

March, 1995

Marilyn L. Griffin
Notary Public.

My Commission expires
March 24, 1998
(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
March 16, 1995

Notice is hereby given of the application of Texaco Exploration & Production Inc., Attention: Terry L. Frazier, Area Manager, P.O. Box 730, Hobbs, New Mexico, 88240, Telephone (505) 393-7191, to the New Mexico Oil Conservation Commission, Energy and Minerals Department, for approval to drill eight water injection wells for the purpose of pressure maintenance. This notice is being republished to reflect corrections to actual surveyed locations.
Unit Name: **Central Vacuum Unit**, Lea County, New Mexico
Well Numbers and Locations:
193 - Unit Letter D, 101 FNL & 534 FWL, Section 6, T18S, R35E
194 - Unit Letter C, 14 FNL & 1917 FWL, Section 6, T18S, R35E
199 - Unit Letter E, 1372 FNL & 584 FWL, Section 6, T18S, R35E
200 - Unit Letter C, 1236 FNL & 1875 FWL, Section 6, T18S, R35E
201 - Unit Letter G, 1360 FNL & 1973 FEL, Section 6, T18S, R35E
206 - Unit Letter E, 2509 FNL & 536 FWL, Section 6, T18S, R35E
207 - Unit Letter F, 2500 FNL & 1825 FWL, Section 6, T18S, R35E
244 - Unit Letter B, 10 FNL & 1930 FEL, Section 6, T18S, R35E
The injection formation is **Vacuum Grayburg San Andres** at a depth of 4300 feet below the surface of the ground. Expected maximum injection rate is 1500 barrels per day, and expected maximum initial injection pressure is 900 pounds per square inch. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, within fifteen (15) days of this publication.

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

two weeks.

Beginning with the issue dated

November 16, 19 94

and ending with the issue dated

November 23, 19 94

Kathi Bearden
General Manager

Sworn and subscribed to before

me this 25 day of

November, 19 94

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
November 16, 23, 1994

Notice is hereby given of the application of Texaco Exploration & Production Inc., Attention: Terry L. Frazier, Area Manager, P.O. Box 730, Hobbs, New Mexico, 88240, Telephone (505) 393-7191, to the New Mexico Oil Conservation Commission, Energy and Minerals Department, for approval to drill eight water injection wells for the purpose of pressure maintenance.

Unit Name: Central Vacuum Unit, Lea County, New Mexico.

Well Numbers and Locations:

193 - Unit Letter M, 10 FSL & 660 FWL, Section 31, T17S, R35E

194 - Unit Letter N, 40FSL & 1980 FWL, Section 31, T17S, R35E

199 - Unit Letter D, 1250 FNL & 625 FWL, Section 6, T18S, R35E

200 - Unit Letter C, 1250 FNL &1925 FWL, Section 6, T18S, R35E

201 - Unit Letter B, 132 FNL & 1980 FEL, Section 6, T18S, R35E

206 - Unit Letter E, 2500 FNL & 575 FWL, Section 6, T18S, R35E

207 - Unit Letter F, 2500 FNL & 1825 FWL, Section 6, T18S, R35E

244 - Unit Letter O, 40 FSL & 1900 FEL, Section 31, T17S, R35E

The injection formation is Vacuum Grayburg San Andres at a depth of 4200 feet below the surface of the ground. Expected maximum injection rate is 1500 barrels per day, and expected maximum initial injection pressure is 900 pounds per square inch. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, within fifteen (15) days of this publication.

February 3, 1995

NEW MEXICO OIL CONSERVATION DIVISION - Form C-108

Application for Water Flood Expansion

Unit Name: **Central Vacuum Unit-** Lea County, New Mexico

Infill Injection Well Numbers and Location:

193 - Unit Letter D,	**101**	**FNL &**	**534**	**FWL, Section**	**6,**	**T18S,**	**R35E**
194 - Unit Letter C,	**14**	**FNL &**	**1917**	**FWL, Section**	**6,**	**T18S,**	**R35E**
199 - Unit Letter E,	**1372**	**FNL &**	**584**	**FWL, Section**	**6,**	**T18S,**	**R35E**
200 - Unit Letter C,	**1301**	**FNL &**	**1875**	**FWL, Section**	**6,**	**T18S,**	**R35E**
201 - Unit Letter G,	**1360**	**FNL &**	**1973**	**FEL, Section**	**6,**	**T18S,**	**R35E**
206 - Unit Letter E,	**2509**	**FNL &**	**536**	**FWL, Section**	**6,**	**T18S,**	**R35E**
207 - Unit Letter F,	**2500**	**FNL &**	**1825**	**FWL, Section**	**6,**	**T18S,**	**R35E**
244 - Unit Letter B,	**10**	**FNL &**	**1930**	**FEL, Section**	**6,**	**T18S,**	**R35E**

III. All pertinent well data is included on the schematic sheets. The CVU is unitized in the Grayburg and San Andres Formations from 4100'- 4800'. There is no shallower production in the immediate vicinity of the proposed wells. At about 6100', the Paddock and Glorieta are unitized in the Vacuum Glorieta West Unit. The Vacuum Drinkard is at 7500' and a pilot pressure maintenance project will be initiated soon.

IV. Data for sections VI, VIII, X and XI has been previously submitted under NMOCD Order R-5530 dated September 20, 1977, amendments R-5530- A/B/C/D, PMX-86 dated May 6, 1980 and PMX-121 dated November 2, 1982.

V. Four maps based on productive horizons are attached:
1) A PI map showing all wells within 2 miles.
2) A Central Vacuum Unit (CVU) map of wells within the 1/2 mile radius area of review (AOR). It shows all Gb/SA wells and the locations of all P&A wells in the AOR.
3) A Vacuum Glorieta West Unit (VGWU) map. Other Glorieta producers are also located on the map.
4) A detail map showing all wells including the deeper completions.

VI. This part of the Vacuum field was also covered by AORs for several projects. NMOCD Order R-9714, dated September 3, 1992, authorized the Vacuum Glorieta West Unit which is operated by Texaco E&P Inc. Texaco E&P has also submitted an application to start a pressure maintenance program in the Vacuum Drinkard by drilling five injection wells and convert two wells to water injection. The hearing was held January 2, 1995 (Case 11152).

NEW MEXICO OIL CONSERVATION DIVISION - Form C-108

Central Vacuum Unit- Vacuum Grayburg San Andres

A schematic of a typical injection well on the Vacuum Glorieta West Unit is included in the Glorieta section. All of the VGWU injection wells in the AOR had identical construction. Also included are schematics for typical wells to be drilled on the Vacuum Drinkard Cooperative Waterflood and Central Vacuum Unit. All casing strings are designed to circulate cement to the surface.

Schematics for abandoned Grayburg/ San Andres wells are located in the Central Vacuum Unit section. All other P&A wells are in the last section with the deeper wells. Within the AOR, Texaco intends to plug New Mexico "L" State No. 6 and No. 7 in 1995.

VII. Proposed average daily injection rate per well is 1000 Bbls per day and anticipated maximum rate is 1500 Bbls per day. Maximum pressure will not exceed 1500 psi system working pressure. The initial injection pressure will be limited to about 860 psi (.2 psi/ft). Step rate tests will be run to establish higher limits with the authorization of the NMOCD. The system will be closed.

IX. The subject wells will be stimulated in stages with 5000 to 10,000 gallons 15% NEFE and surfactants as needed. Rock salt blocks and ball sealers will be used for diversion.

XII. Based on current geological and engineering data, there is no evidence of natural or artificially induced open faults within the unitized interval or above. There is no known communication between the injection zone and any subsurface source of drinking water.

XIII. A Copy of the Legal Notice is attached.

January 27, 1995

NEW MEXICO OIL CONSERVATION DIVISION - Form C-108

Application for Water Flood Expansion

Unit Name: Central Vacuum Unit- Lea County, New Mexico

Infill Injection Well Numbers and Location:

193 - Unit Letter D,	101	FNL &	534	FWL, Section	6,	T18S,	R35E
194 - Unit Letter C,	14	FNL &	1917	FWL, Section	6,	T18S,	R35E
199 - Unit Letter E,	1372	FNL &	584	FWL, Section	6,	T18S,	R35E
200 - Unit Letter C,	1301	FNL &	1875	FWL, Section	6,	T18S,	R35E
201 - Unit Letter G,	1360	FNL &	1973	FEL, Section	6,	T18S,	R35E
206 - Unit Letter E,	2509	FNL &	536	FWL, Section	6,	T18S,	R35E
207 - Unit Letter F,	2500	FNL &	1825	FWL, Section	6,	T18S,	R35E
244 - Unit Letter B,	10	FNL &	1930	FEL, Section	6,	T18S,	R35E

III. All pertinent well data is included on the schematic sheets. The CVU is unitized in the Grayburg and San Andres Formations from 4100'- 4800'. There is no shallower production in the immediate vicinity of the proposed wells. At about 6100', the Paddock and Glorieta are unitized in the Vacuum Glorieta West Unit. The Vacuum Drinkard is at 7500' and a pilot pressure maintenance project will be initiated soon.

IV. Data for sections VI, VIII, X and XI has been previously submitted under NMOCD Order R-5530 dated September 20, 1977, amendments R-5530- A/B/C/D, PMX-86 dated May 6, 1980 and PMX-121 dated November 2, 1982.

V. Four maps based on productive horizons are attached:
1) A PI map showing all wells within 2 miles.
2) A Central Vacuum Unit (CVU) map of wells within the 1/2 mile radius area of review (AOR). It shows all Gb/SA wells and the locations of all P&A wells in the AOR.
3) A Vacuum Glorieta West Unit (VGWU) map.
4) A detail map showing all wells including the deeper completions.

VI. This part of the Vacuum field was also covered by AORs for several projects. NMOCD Order R-9714, dated September 3, 1992, authorized the Vacuum Glorieta West Unit which is operated by Texaco E&P Inc. Texaco E&P has also submitted an application to start a pressure maintenance program in the Vacuum Drinkard by drilling five injection wells and convert two wells to water injection. The hearing was held January 2, 1995 (Case 11152).

Schematics are included for typical injection wells on the Vacuum Glorieta West Unit, Vacuum Drinkard Cooperative Waterflood and the Central Vacuum Unit. All casing strings are designed to circulate cement to the surface.

NEW MEXICO OIL CONSERVATION DIVISION - Form C-108

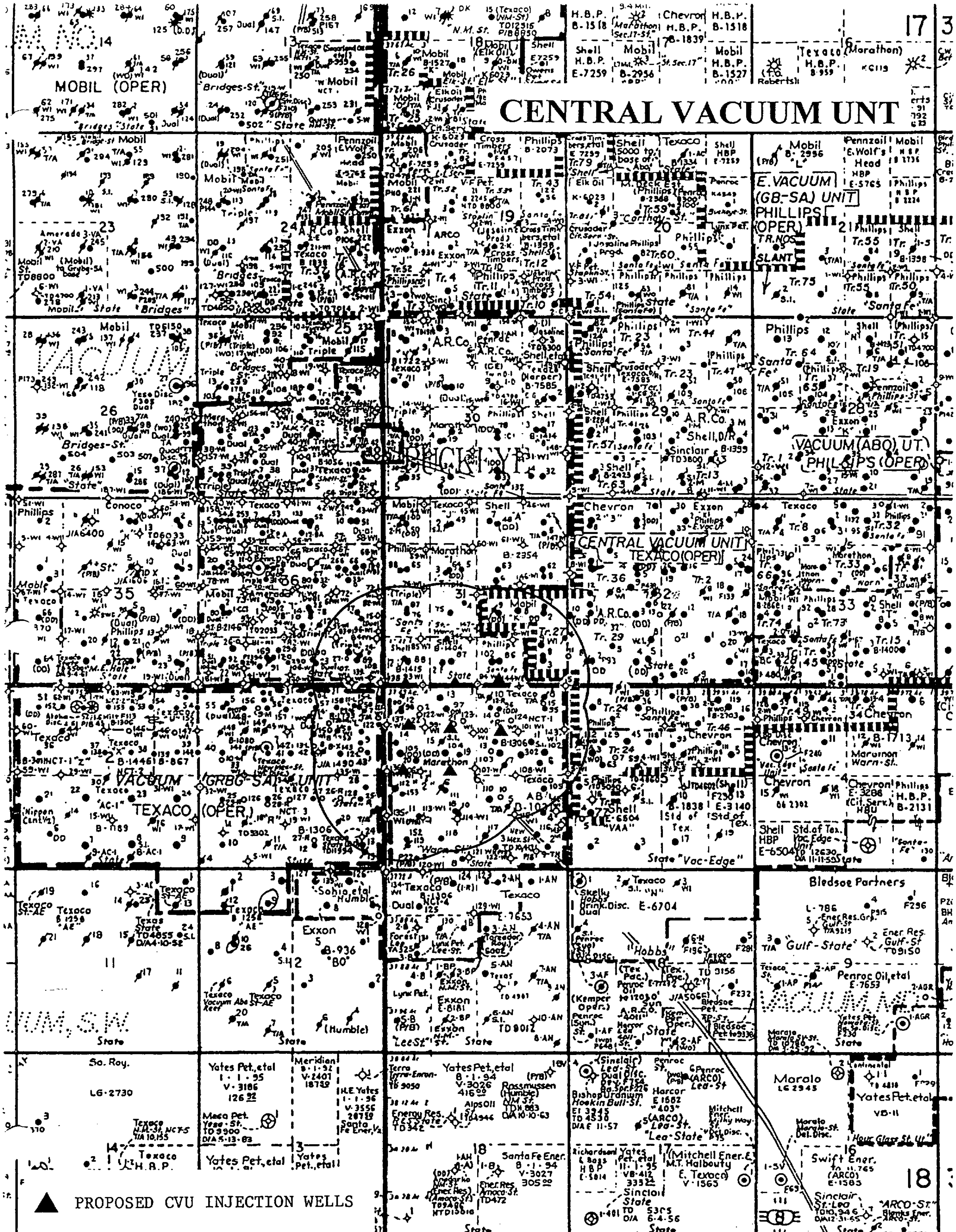
Central Vacuum Unit- Vacuum Grayburg San Andres

VII. Proposed average daily injection rate per well is 1000 Bbls per day and anticipated maximum rate is 1500 Bbls per day. Maximum pressure will not exceed 1500 psi system working pressure. The initial injection pressure will be limited to about 860 psi (.2 psi/ft). Step rate tests will be run to establish higher limits with the authorization of the NMOCD. The system will be closed.

IX. The subject wells will be stimulated in stages with 5000 to 10,000 gallons 15% NEFE and surfactants as needed. Rock salt blocks and ball sealers will be used for diversion.

XII. Based on current geological and engineering data, there is no evidence of natural or artificially induced open faults within the unitized interval or above. There is no known communication between the injection zone and any subsurface source of drinking water.

XIII. A Copy of the Legal Notice is attached.


CENTRAL VACUUM UNT
MOBIL (OPER)
E. VACUUM (GB-SA) UNIT
PHILLIPS (OPER)
VACUUM (ABO) UT.
PHILLIPS (OPER)
CENTRAL VACUUM UNIT
TEXACO (OPER)
VACUUM (GRBG-SA) UNIT
TEXACO (OPER)
Bledsoe Partners
PROPOSED CVU INJECTION WELLS