113036 (Y) WFX

5/22/01

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

MAY - 7 200

FORM C-108
Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: __X__ Secondary Recovery _____ Pressure Maintenance _____ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: PHILLIPS PETROLEUM COMPANY

ADDRESS: 4001 PENBROOK, ODESSA, TX 79762

CONTACT PARTY: JACK T. LOWDER PHONE: (915) 368-1609

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? __X__ Yes _____ No
If yes, give the Division order number authorizing the project: R-3154

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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources 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 sources 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: LARRY M. SANDERS TITLE: SUP. REGULATION / PRORATION

SIGNATURE: L. M. Sanders DATE: 5/03/01

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

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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 the 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, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, 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.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

III. WELL DATA

The following data sheets describe the 6 Proposed Water Injection Wells for which Phillips Petroleum Company is submitting this application. The injection wells have not been drilled. The following data sheets contain estimates based on the proposed drilling program.

INJECTION WELL DATA SHEET

OPERATOR: PHILLIPS PETROLEUM COMPANY

WELL NAME & NUMBER: LEAMEX # 58W (Proposed New Well)

WELL LOCATION:	660 FSL & 2130 FEL	O	24	17S	33E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC
(See Attachment)

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 #/ft

Cemented with: 745 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Intermediate Casing

Hole Size: N/A Casing Size:

Cemented with: sx. ***or*** ft^3

Top of Cement: Method Determined:

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 15.5 #/ft

Cemented with: 1100 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Total Depth: 4,750 ft

Injection Interval

PERFORATED 2 SPF 4180 feet to 4750'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET
Leamex #58W (Proposed New Well)

Tubing Size: 2-3/8" 4.7 #/ft Lining Material: INTERNALLY PLASTIC COATED WITH TK-70

Type of Packer: LOK-SET TYPE PACKER WITH ON-OFF TOOL

Packer Setting Depth: 4140 ft

Other Type of Tubing/ Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: GRAYBURG SAN ANDRES

3. Name of Field or Pool (if applicable): MALJAMAR GRAYBURG SAN ANDRES

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i. e. sacks of cement or plug(s) used. NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: QUEEN 3797 to 4201 feet
GLORIETA Top at 6060 feet (depth based on wells which penetrate the Glorieta formation in the E/2 of section 23, T-17-S, R-33-E)

INJECTION WELL DATA SHEET

OPERATOR: PHILLIPS PETROLEUM COMPANY

WELL NAME & NUMBER: LEAMEX # 59W (Proposed New Well)

WELL LOCATION:	760 FSL & 700 FWL	M	24	17S	33E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC
(See Attachment)

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 #/ft

Cemented with: 745 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Intermediate Casing

Hole Size: N/A Casing Size:

Cemented with: sx. ***or*** ft^3

Top of Cement: Method Determined:

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 15.5 #/ft

Cemented with: 1100 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Total Depth: 4,750 ft

Injection Interval

PERFORATED 2 SPF 4180 feet to 4750'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET
Leamex #59W (Proposed New Well)

Tubing Size: 2-3/8" 4.7 #/ft Lining Material: INTERNALLY PLASTIC COATED WITH TK-70

Type of Packer: LOK-SET TYPE PACKER WITH ON-OFF TOOL

Packer Setting Depth: 4140 ft

Other Type of Tubing/ Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: GRAYBURG SAN ANDRES

3. Name of Field or Pool (if applicable): MALJAMAR GRAYBURG SAN ANDRES

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i. e. sacks of cement or plug(s) used. NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: QUEEN 3795 to 4193 feet
GLORIETA Top at 6060 feet (depth based on wells which penetrate the Glorieta formation in the E/2 of section 23, T-17-S, R-33-E)

INJECTION WELL DATA SHEET

OPERATOR: PHILLIPS PETROLEUM COMPANY

WELL NAME & NUMBER: LEAMEX # 60W (Proposed New Well)

WELL LOCATION:	1980 FSL & 1980 FWL	K	24	17S	33E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC
(See Attachment)

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 #/ft

Cemented with: 745 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Intermediate Casing

Hole Size: N/A Casing Size: _____

Cemented with: _____ sx. ***or*** _____ ft^3

Top of Cement: _____ Method Determined: _____

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 15.5 #/ft

Cemented with: 1100 sx. ***or*** _____ ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Total Depth: 4,750 ft

Injection Interval

PERFORATED 2 SPF 4180 feet to 4750'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET
Leamex #60W (Proposed New Well)

Tubing Size: 2-3/8" 4.7 #/ft Lining Material: INTERNALLY PLASTIC COATED WITH TK-70

Type of Packer: LOK-SET TYPE PACKER WITH ON-OFF TOOL

Packer Setting Depth: 4140 ft

Other Type of Tubing/ Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: GRAYBURG SAN ANDRES

3. Name of Field or Pool (if applicable): MALJAMAR GRAYBURG SAN ANDRES

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i. e. sacks of cement or plug(s) used. NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: QUEEN 3781 to 4191 feet
GLORIETA Top at 6060 feet (depth based on wells which penetrate the Glorieta formation in the E/2 of section 23, T-17-S, R-33-E)

INJECTION WELL DATA SHEET

OPERATOR: PHILLIPS PETROLEUM COMPANY

WELL NAME & NUMBER: LEAMEX # 61W (Proposed New Well)

WELL LOCATION:	660 FNL & 1940 FWL	C	25	17S	33E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC
(See Attachment)

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 #/ft

Cemented with: 745 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Intermediate Casing

Hole Size: N/A Casing Size:

Cemented with: sx. ***or*** ft^3

Top of Cement: Method Determined:

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 15.5 #/ft

Cemented with: 1100 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Total Depth: 4,750 ft

Injection Interval

PERFORATED 2 SPF 4180 feet to 4750'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET
Leamex #61W (Proposed New Well)

Tubing Size: 2-3/8" 4.7 #/ft Lining Material: INTERNALLY PLASTIC COATED WITH TK-70

Type of Packer: LOK-SET TYPE PACKER WITH ON-OFF TOOL

Packer Setting Depth: 4140 ft

Other Type of Tubing/ Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: GRAYBURG SAN ANDRES

3. Name of Field or Pool (if applicable): MALJAMAR GRAYBURG SAN ANDRES

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i. e. sacks of cement or plug(s) used. NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: QUEEN 3806 to 4195 feet
GLORIETA Top at 6060 feet (depth based on wells which penetrate the Glorieta formation in the E/2 of section 23, T-17-S, R-33-E)

INJECTION WELL DATA SHEET

OPERATOR: PHILLIPS PETROLEUM COMPANY

WELL NAME & NUMBER: LEAMEX # 62W (Proposed New Well)

WELL LOCATION:	1980 FSL & 660 FEL	I	23	17S	33E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC
(See Attachment)

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 #/ft

Cemented with: 745 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Intermediate Casing

Hole Size: N/A Casing Size:

Cemented with: sx. ***or*** ft^3

Top of Cement: Method Determined:

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 15.5 #/ft

Cemented with: 1100 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Total Depth: 4,750 ft

Injection Interval

PERFORATED 2 SPF 4180 feet to 4750'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET
Leamex #62W (Proposed New Well)

Tubing Size: 2-3/8" 4.7 #/ft Lining Material: INTERNALLY PLASTIC COATED WITH TK-70

Type of Packer: LOK-SET TYPE PACKER WITH ON-OFF TOOL

Packer Setting Depth: 4140 ft

Other Type of Tubing/ Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: GRAYBURG SAN ANDRES

3. Name of Field or Pool (if applicable): MALJAMAR GRAYBURG SAN ANDRES

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i. e. sacks of cement or plug(s) used. NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: QUEEN 3797 to 4205 feet
GLORIETA Top at 6060 feet (depth based on wells which penetrate the Glorieta formation in the E/2 of section 23, T-17-S, R-33-E)

INJECTION WELL DATA SHEET

OPERATOR: PHILLIPS PETROLEUM COMPANY

WELL NAME & NUMBER: LEAMEX # 63W (Proposed New Well)

WELL LOCATION:	1980 FNL & 660 FWL	E	24	17S	33E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC
(See Attachment)

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8" 24 #/ft

Cemented with: 745 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Intermediate Casing

Hole Size: N/A Casing Size:

Cemented with: sx. ***or*** ft^3

Top of Cement: Method Determined:

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 15.5 #/ft

Cemented with: 1100 sx. ***or*** ft^3

Top of Cement: SURFACE Method Determined: ESTIMATED

Total Depth: 4,750 ft

Injection Interval

PERFORATED 2 SPF 4180 feet to 4750'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET
Leamex #63W (Proposed New Well)

Tubing Size: 2-3/8" 4.7 #/ft Lining Material: INTERNALLY PLASTIC COATED WITH TK-70

Type of Packer: LOK-SET TYPE PACKER WITH ON-OFF TOOL

Packer Setting Depth: 4140 ft

Other Type of Tubing/ Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

If no, for what purpose was the well originally drilled? _____

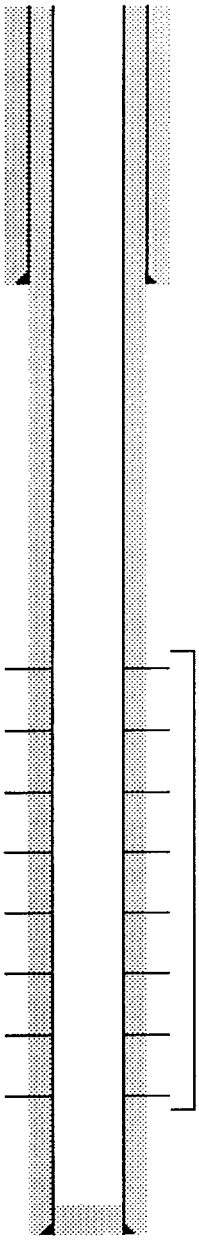
2. Name of the Injection Formation: GRAYBURG SAN ANDRES

3. Name of Field or Pool (if applicable): MALJAMAR GRAYBURG SAN ANDRES

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i. e. sacks of cement or plug(s) used. NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: QUEEN 3788 to 4209 feet
GLORIETA Top at 6060 feet (depth based on wells which penetrate the Glorieta formation in the E/2 of section 23, T-17-S, R-33-E)

Phillips Petroleum Company - Southwest Region
4/10/2001



GL 4104'

8 5/8" Casing (12 1/4" hole)
24# J-55
set @ 1600', 745 sx cmt.
TOC: Surface

5 1/2" Casing (7 7/8" hole)
15.5# J-55
set @ 4750', 1100 sx cmt.
TOC: Surface

Estimated
Grayburg San Andres
Perforation Interval:

4341 - 4680'
2 SPF

PBTD: T.B.D.
TD: 4750'

Lease & Well No.: **Leamex #58W (Proposed New Well)**

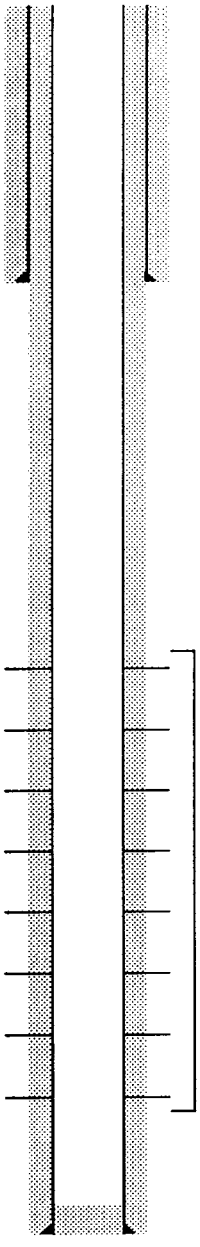
Well Category: One Status : Proposed Inj
Area: New Mexico
Subarea: Caprock
Field : Maljamar Grayburg/San Andres
API Number: 30-025-
Legal Description: 660' FSL, 2130' FEL, Sec 24, T-17-S, R-33-E
Lea County, New Mexico
Spudded: T.B.D.
Completed:

Well History:

Estimated
Formation Tops:

Queen	3797'	Grayburg Z5	4438'
Grayburg Z1	4201'	Grayburg Z6	4502'
Grayburg Z2	4251'	Grayburg Z7	4559'
Grayburg Z3	4341'	San Andres	4600'
Grayburg Z4	4382'		

Phillips Petroleum Company - Southwest Region
4/10/2001



GL 4120'

8 5/8" Casing (12 1/4" hole)
24# J-55
set @ 1600', 745 sx cmt.
TOC: Surface

5 1/2" Casing (7 7/8" hole)
15.5# J-55
set @ 4750', 1100 sx cmt.
TOC: Surface

Estimated
Grayburg San Andres
Perforation Interval:

4330 - 4650'
2 SPF

PBTD: T.B.D.
TD: 4750'

Lease & Well No.: **Leamex #59W (Proposed New Well)**

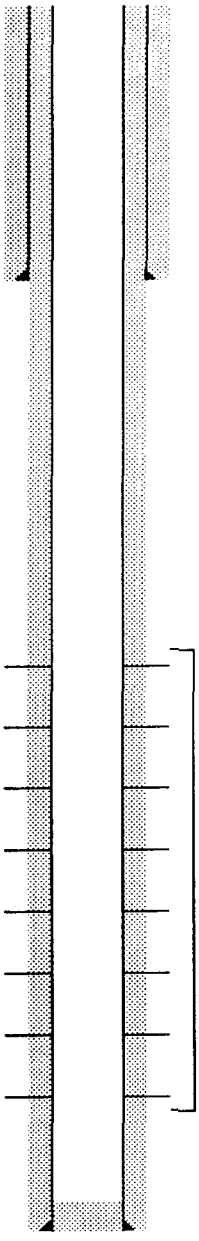
Well Category: One Status : Proposed Inj
Area: New Mexico
Subarea: Caprock
Field : Maljamar Grayburg/San Andres
API Number: 30-025-
Legal Description: 760' FSL, 700' FWL, Sec 24, T-17-S, R-33-E
Lea County, New Mexico
Spudded: T.B.D.
Completed:

Well History:

Estimated
Formation Tops:

Queen	3795'	Grayburg Z5	4424'
Grayburg Z1	4193'	Grayburg Z6	4491'
Grayburg Z2	4244'	Grayburg Z7	4553'
Grayburg Z3	4330'	San Andres	4586'
Grayburg Z4	4370'		

Phillips Petroleum Company - Southwest Region
4/10/2001



GL 4110'

8 5/8" Casing (12 1/4" hole)
24# J-55
set @ 1600', 745 sx cmt.
TOC: Surface

5 1/2" Casing (7 7/8" hole)
15.5# J-55
set @ 4750', 1100 sx cmt.
TOC: Surface

Estimated
Grayburg San Andres
Perforation Interval:

4336 - 4650'
2 SPF

PBTD: T.B.D.
TD: 4750'

Lease & Well No.: **Leamex #60W (Proposed New Well)**

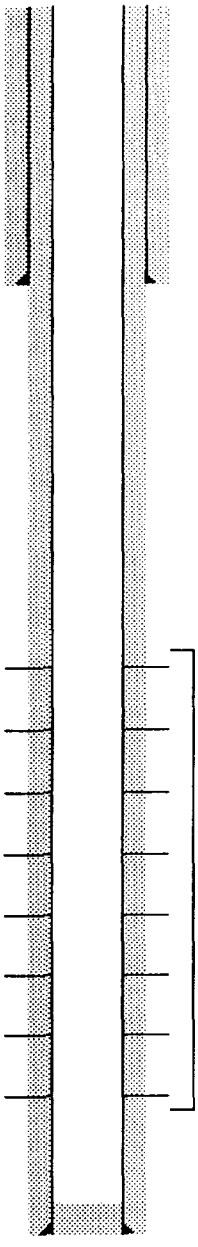
Well Category: One Status : Proposed Inj
Area: New Mexico
Subarea: Caprock
Field : Maljamar Grayburg/San Andres
API Number: 30-025-
Legal Description: 1980' FSL, 1980' FWL, Sec 24, T-17-S, R-33-E
Lea County, New Mexico
Spudded: T.B.D.
Completed:

Well History:

Estimated
Formation Tops:

Queen	3781'	Grayburg Z5	4428'
Grayburg Z1	4191'	Grayburg Z6	4489'
Grayburg Z2	4243'	Grayburg Z7	4535'
Grayburg Z3	4336'	San Andres	4573'
Grayburg Z4	4375'		

Phillips Petroleum Company - Southwest Region
4/10/2001



GL 4112'

8 5/8" Casing (12 1/4" hole)
24# J-55
set @ 1600', 745 sx cmt.
TOC: Surface

5 1/2" Casing (7 7/8" hole)
15.5# J-55
set @ 4750', 1100 sx cmt.
TOC: Surface

Estimated
Grayburg San Andres
Perforation Interval:

4327 - 4680'
2 SPF

PBTD: T.B.D.
TD: 4750'

Lease & Well No.: **Leamex #61W (Proposed New Well)**

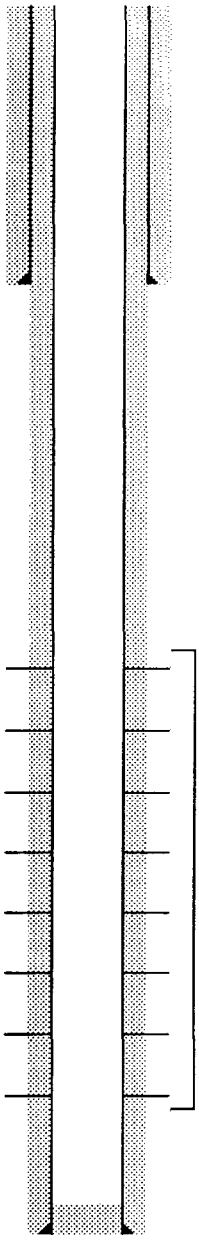
Well Category: One Status : Proposed Inj
Area: New Mexico
Subarea: Caprock
Field : Maljamar Grayburg/San Andres
API Number: 30-025-
Legal Description: 660' FNL, 1940' FWL, Sec 25, T-17-S, R-33-E
Lea County, New Mexico
Spudded: T.B.D.
Completed:

Well History:

Estimated
Formation Tops:

Queen	3806'	Grayburg Z5	4426'
Grayburg Z1	4195'	Grayburg Z6	4496'
Grayburg Z2	4240'	Grayburg Z7	4555'
Grayburg Z3	4327'	San Andres	4586'
Grayburg Z4	4369'		

Phillips Petroleum Company - Southwest Region
4/10/2001



PBTD: T.B.D.
TD: 4750'

GL 4124'

8 5/8" Casing (12 1/4" hole)
24# J-55
set @ 1600', 745 sx cmt.
TOC: Surface

5 1/2" Casing (7 7/8" hole)
15.5# J-55
set @ 4750', 1100 sx cmt.
TOC: Surface

Estimated
Grayburg San Andres
Perforation Interval:

4341 - 4680'
2 SPF

Lease & Well No.: **Leamex #62W (Proposed New Well)**

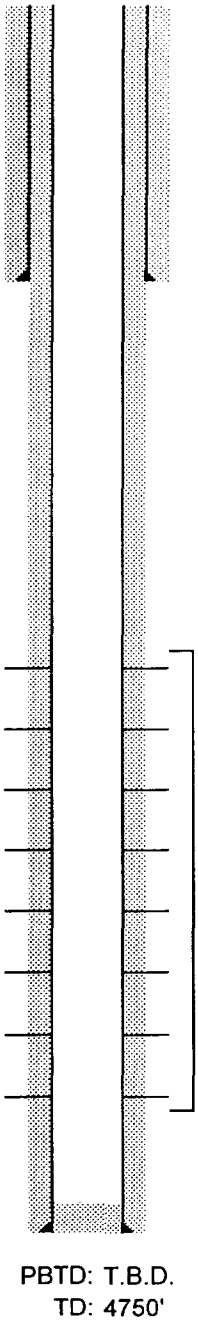
Well Category: One Status : Proposed Inj
Area: New Mexico
Subarea: Caprock
Field : Maljamar Grayburg/San Andres
API Number: 30-025-
Legal Description: 1980' FSL, 660' FEL, Sec 23, T-17-S, R-33-E
Lea County, New Mexico
Spudded: T.B.D.
Completed:

Well History:

Estimated
Formation Tops:

Queen	3797'	Grayburg Z5	4434'
Grayburg Z1	4205'	Grayburg Z6	4495'
Grayburg Z2	4254'	Grayburg Z7	4562'
Grayburg Z3	4341'	San Andres	4597'
Grayburg Z4	4381'		

Phillips Petroleum Company - Southwest Region
4/10/2001



GL 4120'

8 5/8" Casing (12 1/4" hole)
24# J-55
set @ 1600', 745 sx cmt.
TOC: Surface

5 1/2" Casing (7 7/8" hole)
15.5# J-55
set @ 4750', 1100 sx cmt.
TOC: Surface

Estimated
Grayburg San Andres
Perforation Interval:

4350 - 4650'
2 SPF

PBTD: T.B.D.
TD: 4750'

Lease & Well No.: **Leamex #63W (Proposed New Well)**

Well Category:	One Status : Proposed Inj
Area:	New Mexico
Subarea:	Caprock
Field :	Maljamar Grayburg/San Andres
API Number:	30-025-
Legal Description:	1980' FNL, 660' FWL, Sec 24, T-17-S, R-33-E Lea County, New Mexico
Spudded:	T.B.D.
Completed:	

Well History:

Estimated
Formation Tops:

Queen	3788'	Grayburg Z5	4442'
Grayburg Z1	4209'	Grayburg Z6	4497'
Grayburg Z2	4263'	Grayburg Z7	4536'
Grayburg Z3	4350'	San Andres	4573'
Grayburg Z4	4390'		

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APPLICATION FOR AUTHORIZATION TO INJECT
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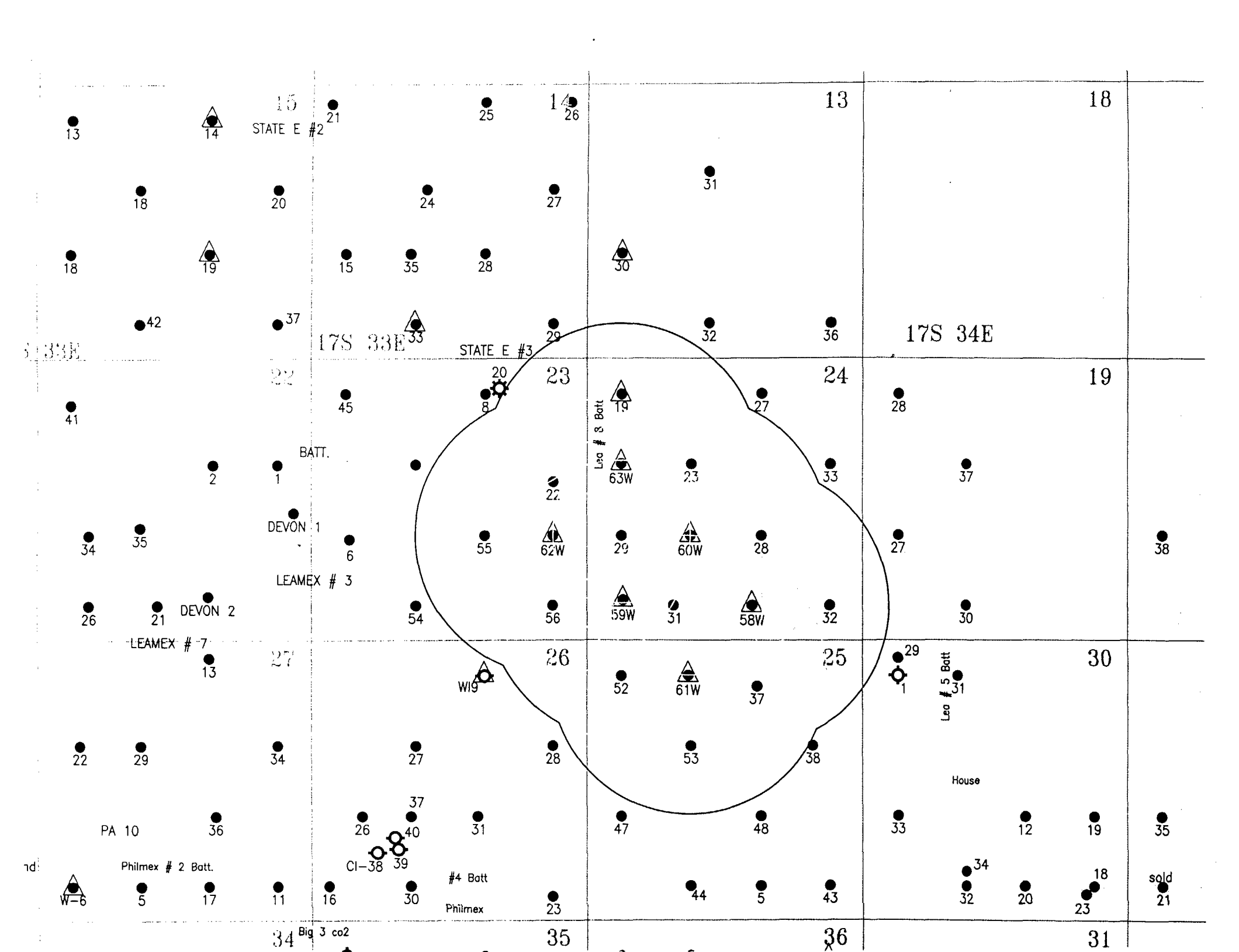
V. MAPS OF AREA OF REVIEW

The following map identifies all wells located within two miles of any proposed injection well with a half-mile radius drawn around the area of review. The second map illustrates, in greater detail, the wells that are located within the area of review, including the proposed injection wells.


15
14
13
18
STATE E #2
17S 33E
STATE E #3
17S 34E
22
23
24
19
BATT.
DEVON 1
LEAMEX # 3
DEVON 2
LEAMEX # 7
Lea # 8 Batt
27
26
25
30
WI9
61W
Lea # 5 Batt
House
PA 10
Philmex # 2 Batt.
CI-38
#4 Batt
Philmex
sold
34
35
36
31
Big 3 co2

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VI. WELLS WITHIN THE ½ MILE AREA OF REVIEW

The following table presents data for all wells that are located within the area of review and which penetrate the proposed injection zone. Well schematics are attached, for each well, to illustrate the record of completion and construction.

WELLS WITHIN 1/2 MILE AREA OF REVIEW

Lease Name	Well No.	Operator	API Number	Type	TOC	Construction	Date Drilled	Record of Completion	Depth	Unit	Location
Leamex State	22	Phillips	3002526422	TA	Surface	See Schematic	12/01/79	See Schematic	4700	H	23 17S 33E 2310FNL 660FEL
Leamex State	55	Phillips	3002530480	PROD	Surface	"	10/09/88	"	4750	J	23 17S 33E 1980FSL 1980FEL
Leamex State	56	Phillips	3002530481	PROD	Surface	"	10/17/88	"	4800	P	23 17S 33E 660FSL 660FEL
Leamex State	19	Phillips	3002526420	WDW	Surface	"	11/13/79	"	4700	D	24 17S 33E 660FNL 660FWL
Leamex State	23	Phillips	3002526423	TA	Surface	"	11/23/79	"	4700	F	24 17S 33E 1980FNL 1980FWL
Leamex State	29	Phillips	3002526852	PROD	Surface	"	07/24/80	"	4710	L	24 17S 33E 1980FSL 660FWL
Leamex State	28	Phillips	3002526851	PROD	Surface	"	07/05/80	"	4700	J	24 17S 33E 1980FSL 1980FEL
Leamex State	31	Phillips	3002527650	SIP	Surface	"	01/30/82	"	4800	N	24 17S 33E 660FSL 1650FWL
Leamex State	32	Phillips	3002527651	TA	Surface	"	12/23/81	"	4800	P	24 17S 33E 660FSL 660FEL
Leamex State	52	Phillips	3002530467	PROD	Surface	"	10/02/88	"	4800	D	25 17S 33E 660FNL 660FWL
Leamex State	37	Phillips	3002529115	PROD	Surface	"	12/13/85	"	4797	B	25 17S 33E 860FNL 2055FEL
Leamex State	53	Phillips	3002530453	SIP	Surface	"	09/24/88	"	4800	F	25 17S 33E 1980FNL 1980FWL
Leamex State	38	Phillips	3002529116	PROD	1850' CBL	"	11/23/85	"	4800	H	25 17S 33E 1980FNL 990FEL

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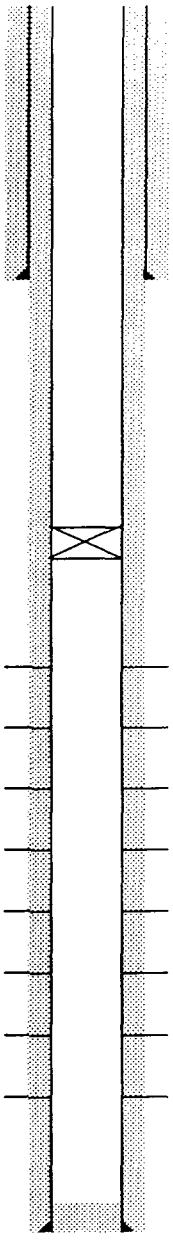


GL 4116'
DF 4127'
RKB 4128'

8 5/8" Casing (12 1/4" hole)
set @ 403', 400 sx cmt.
Circ. 100 sx
10 jts - 24# K-55 ST&C

CIBP at 4300'

Grayburg Perforations

4383' - 4389' w/ 2 SPF (12 holes) Z4

4439' - 4442' w/ 2 SPF (6 holes) Z5

4482' - 4486' w/ 2 SPF (8 holes) Z6

4495' - 4499' w/ 2 SPF (8 holes) Z6

4501' - 4504' w/ 2 SPF (6 holes) Z6

4525' - 4529' w/ 2 SPF (8 holes) Z7

4546' - 4550' w/ 2 SPF (8 holes) Z7

4557' - 4561' w/ 2 SPF (8 holes) Z7

4 1/2" Casing (7 7/8" hole)
set @ 4700', 2125 sx cmt.
Circ. 300 sx
124 jts - 11.6# N-80 LT&C

PBTD: 4603'
TD: 4700'

Lease & Well No.: **Leamex #22**

Well Category:	One	Status : TA'd Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-26422	
Legal Description:	2310' FNL, 660' FEL, Sec 23, T-17-S, R-33-E Lea County, New Mexico	
Spudded:	12/01/1979	
Completed:	12/26/1979	

Well History:

12/79 Perf'd Grayburg 4383-89', 4439-42', 4482-86', 4495-99', 4501-04', 4525-29', 4546-50', and 4557-61' w/ 2 spf (64 holes). Acdzd 4525-61' overall w/ 250 gal 12% HCl / 6% HF. Acdzd 4439-4504' w/ 500 gal 12% HCl / 6% HF. Acdzd 4383-89' overall w/ 500 gal 12% HCl / 6% HF. Frac'd 4383-4561' dwn csg w/ 27,000 gal refined oil & 32,000 lbs 20-40 mesh sand in 4 stages. AIR 20 bpm. ISIP 3400#. IPP 1/14/80 28 bo, 23 mcf, 0 bw / 24 hrs.

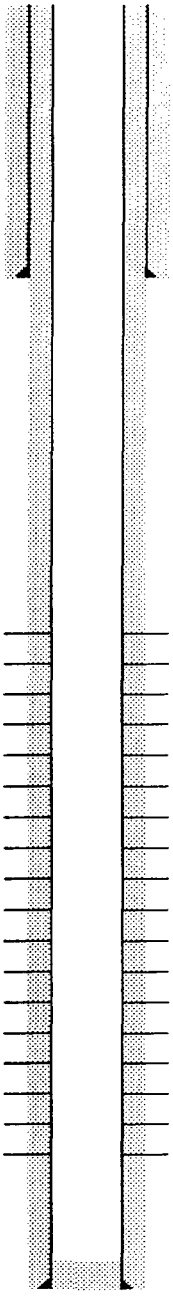
3/95 Set CIBP at 4300'. Tstd csg & CIBP to 500 psig for 30 min. OK. Circ well w/ fresh wtr containing 1% corrosion inhibitor. TA'd 3/4/95.

Formation Tops:

Queen	3786'	Grayburg Z5	4428'
Grayburg Z1	4199'	Grayburg Z6	4482'
Grayburg Z2	4247'	Grayburg Z7	4522'
Grayburg Z3	4328'	San Andres	4572'
Grayburg Z4	4376'		

Surface Equipment:
Lufkin 114-143-64 Pumping Unit
20 HP Electric Motor

Phillips Petroleum Company - Southwest Region
February 8, 2001



GL 4132'
DF 4143'
RKB 4144'

8 5/8" Casing (12 1/4" hole)
set @ 1515', 1000 sx cmt.
Circ. 120 sx
38 jts - 24# K-55 ST&C

Grayburg Perforations

4314' - 4316' w/ 2 SPF (4 holes) Z2
4318' - 4320' w/ 2 SPF (4 holes) Z2
4368' - 4371' w/ 2 SPF (6 holes) Z3
4406' - 4410' w/ 2 SPF (8 holes) Z4
4462' - 4466' w/ 2 SPF (8 holes) Z5
4489' - 4492' w/ 2 SPF (6 holes) Z5
4500' - 4503' w/ 2 SPF (6 holes) Z5
4513' - 4518' w/ 2 SPF (10 holes) Z6
4530' - 4536' w/ 2 SPF (12 holes) Z6
4543' - 4551' w/ 2 SPF (16 holes) Z6
4560' - 4564' w/ 2 SPF (8 holes) Z6
4578' - 4580' w/ 2 SPF (4 holes) Z6
4586' - 4589' w/ 2 SPF (6 holes) Z6
4591' - 4594' w/ 2 SPF (6 holes) Z6
4600' - 4602' w/ 2 SPF (4 holes) Z7
4606' - 4608' w/ 2 SPF (4 holes) Z7
4612' - 4614' w/ 2 SPF (4 holes) Z7
4617' - 4622' w/ 2 SPF (10 holes) Z7

5 1/2" Casing (7 7/8" hole)
set @ 4750', 1300 sx cmt.
Circ. 225 sx
116 jts - 15.5# K-55 ST&C

PBTD: 4671'
TD: 4750'

Lease & Well No.: **Leamex #55**

Well Category:	One	Status : Active Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-30480	
Legal Description:	1980' FSL, 1980' FEL, Sec 23, T-17-S, R-33-E	
	Lea County, New Mexico	
Spudded:	10/09/1988	
Completed:	11/16/1988	

Well History:
11/88 Perf'd Grayburg 4314-16', 4318-20', 4368-71', 4406-10', 4462-66', 4489-92', 4500-03', 4513-18', 4530-36', 4543-51', 4560-64', 4578-80', 4586-89', 4591-94', 4600-02', 4606-08', 4612-14', 4617-22' w/ 2 spf (126 holes). Acdzd 4314-4662' overall w/ 6500 gal 15% NEFE HCl using 145 ball sealers. Frac'd 4314-4662' overall dwn csg w/ 110,000 gal 40# gelled wtr, 175,500 lbs of 16-30 mesh Ottawa sand, and 29,000 lbs of 16-30 mesh resin-coated sand in 2 stages. RA tagged both stages and each resin coated stage. AIR 40 bpm. Max P 4400#. Avg P 2600#. ISIP 2580#. CO sand to 4671'. IPP 12/22/88 73 bo, 115 mcfg (GOR 1575), and 27 bw / 24 hrs.

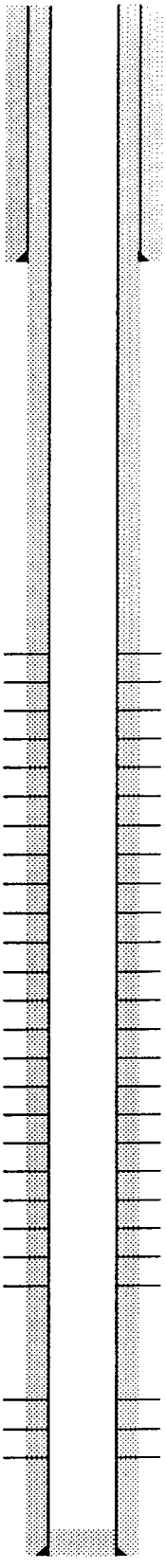
Equipment Data as of 8/91:
148 jts 2 3/8" 4.7# J-55 Tubing @ 4670'
SN @ 4640', TAC @ 4268'
2" x 1 1/4" x 16' rod pump
56 - 7/8" Grade D rods 1400'
128 - 3/4" Grade D rods 3200'

Formation Tops:

Queen	3806'	Grayburg Z5	4449'
Grayburg Z1	4222'	Grayburg Z6	4510'
Grayburg Z2	4263'	Grayburg Z7	4600'
Grayburg Z3	4359'	San Andres	4626'
Grayburg Z4	4397'		

Surface Equipment:
Bethlehem 228-20S Pumping Unit
30 HP Electric Motor

Phillips Petroleum Company - Southwest Region
February 8, 2001



GL 4131'
DF 4142'
RKB 4143'

8 5/8" Casing (12 1/4" hole)
set @ 1525', 1000 sx cmt.
Circ. 180 sx
37 jts - 24# K-55 ST&C

Grayburg Perforations

4221' - 4223' w/ 2 SPF (4 holes) Z1
4275' - 4277' w/ 2 SPF (4 holes) Z2
4290' - 4292' w/ 2 SPF (4 holes) Z2
4294' - 4298' w/ 2 SPF (8 holes) Z2
4352' - 4355' w/ 2 SPF (6 holes) Z3
4389' - 4395' w/ 2 SPF (12 holes) Z4
4446' - 4450' w/ 2 SPF (8 holes) Z5
4476' - 4479' w/ 2 SPF (6 holes) Z5
4489' - 4491' w/ 2 SPF (4 holes) Z5
4496' - 4498' w/ 2 SPF (4 holes) Z5
4503' - 4508' w/ 2 SPF (10 holes) Z6
4518' - 4522' w/ 2 SPF (8 holes) Z6
4524' - 4526' w/ 2 SPF (4 holes) Z6
4527' - 4530' w/ 2 SPF (6 holes) Z6
4537' - 4539' w/ 2 SPF (4 holes) Z6
4542' - 4548' w/ 2 SPF (12 holes) Z6
4559' - 4564' w/ 2 SPF (10 holes) Z6
4569' - 4575' w/ 2 SPF (12 holes) Z6
4578' - 4580' w/ 2 SPF (4 holes) Z6
4586' - 4588' w/ 2 SPF (4 holes) Z7
4591' - 4594' w/ 2 SPF (6 holes) Z7
4600' - 4602' w/ 2 SPF (4 holes) Z7
4605' - 4609' w/ 2 SPF (8 holes) Z7

San Andres Perforations

4654' - 4657' w/ 2 SPF (6 holes) SA
4663' - 4665' w/ 2 SPF (4 holes) SA
4669' - 4671' w/ 2 SPF (4 holes) SA

5 1/2" Casing (7 7/8" hole)
set @ 4800', 1300 sx cmt.
Circ. 220 sx
118 jts - 15.5# K-55 ST&C

PBTD: 4757'
TD: 4800'

Lease & Well No.: **Leamex #56**

Well Category:	One	Status : Active Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-30481	
Legal Description:	660' FSL, 660' FEL, Sec 23, T-17-S, R-33-E Lea County, New Mexico	
Spudded:	10/17/1988	
Completed:	11/28/1988	

Well History:

11/88 Perf'd Grayburg 4221-23', 4275-77', 4290-92', 4294-98', 4352-55', 4389-95', 4446-50', 4476-79', 4489-91', 4496-98', 4503-08', 4518-22', 4524-26', 4527-30', 4537-39', 4542-48', 4559-64', 4569-75', 4578-80', 4586-88', 4591-94', 4600-02', 4605-09', and San Andres 4654-57', 4663-65', 4669-71' w/ 2 spf (166 holes). Acdzd 4221-4671' overall w/ 9000 gal 15% NEFE HCl w/ 196 ball sealers. Frac'd 4221-4671' overall dwn csg w/ 110,000 gal 40# gelled wtr, 115,500 lbs of 16-30 mesh Ottawa sand, and 29,000 lbs of 16-30 mesh resin-coated sand in 2 stages. AIR 41 bpm. Max P 4200#. Avg P 2850#. ISIP 2410#. CO sand 4615-4752'. IPP 12/20/88 150 bo, GOR 2067 (310 mcf), 41 bw / 24 hrs.

8/98 Tagged PBTD @ 4748'. Acdzd 4221-4671' overall w/ 3000 gal 15% anti-sludge HCl. Pmpd 8000 gal gelled wtr mini-frac. ISIP 1400#. Frac'd 4221-4671' overall dwn csg w/ 67,000 gal gelled wtr, 200,000 lbs of 16-30 mesh Brady sand, and 30,000 lbs of 16-30 mesh resin-coated Brady sand. AIR 51 bpm. Max P 3400#. Avg P 2990#. ISIP 2400#. Prod before: 3 bopd, 11 mcfd, 2 bwpd. Prod after: 3 bopd, 12 mcfd, 0 bwpd on 3/8/99.

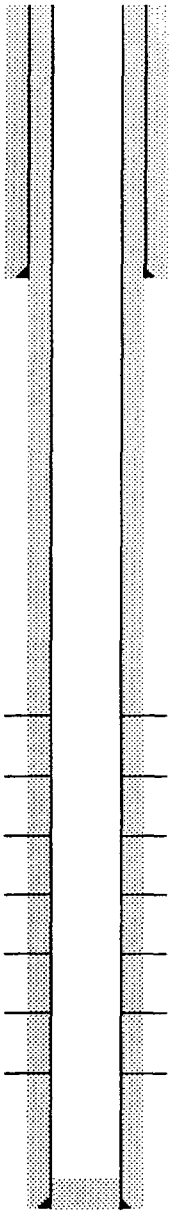
Equipment Data as of 8/98:
149 jts 2 3/8" 4.7# J-55 Tubing @ 4713'
TAC @ 4094', SN @ 4693'
2" x 1 1/4" x 16' rod pump
59 - 7/8" Grade D rods 1475'
127 - 3/4" Grade D rods 3175'

Formation Tops:

Queen	3810'	Grayburg Z5	4434'
Grayburg Z1	4205'	Grayburg Z6	4500'
Grayburg Z2	4257'	Grayburg Z7	4586'
Grayburg Z3	4342'	San Andres	4614'
Grayburg Z4	4380'		

Surface Equipment:
Lufkin 228-246-86 Pumping Unit
20 HP Electric Motor

Phillips Petroleum Company - Southwest Region
January 24, 2001



GL 4124'
DF 4134'
RKB 4135'

8 5/8" Casing (12 1/4" hole)
set @ 432', 600 sx cmt.
Circ. 50 sx
10 jts - 24# K-55 LT&C

Grayburg Perforations

4390' - 4395' w/ 2 SPF (10 holes) Z3

4428' - 4435' w/ 3 SPF (21 holes) Z4

4481' - 4486' w/ 2 SPF (10 holes) Z5

4508' - 4513' w/ 2 SPF (10 holes) Z5

4524' - 4529' w/ 2 SPF (10 holes) Z6

4554' - 4558' w/ 2 SPF (8 holes) Z7

4561' - 4564' w/ 2 SPF (6 holes) Z7

4 1/2" Casing (7 7/8" hole)
set @ 4689', 1650 sx cmt.
Circ. 15 sx
119 jts - 11.6# N-80 LT&C

PBTD: 4644'
TD: 4700'

Lease & Well No.: **Leamex #19**

Well Category:	One	Status : Active WDW
Area:	New Mexico	
Subarea:	Caprock	Field : Maljamar Grayburg/San Andres
API Number:	30-025-26420	
Legal Description:	660' FNL, 660' FWL, Sec 24, T-17-S, R-33-E Lea County, New Mexico	
Spudded:	11/13/1979	
Completed:	12/6/1979	

Well History:

12/79 Perf'd Grayburg 4390-95', 4481-86', 4508-13', 4524-29', 4554-58', and 4561-64' w/ 2 spf (54 holes). Perf'd Grayburg 4428-35' w/ 3 spf (21 holes). Acdzd 4554-64' w/ 250 gal 12% HCl / 6% HF. Acdzd 4508-29' w/ 500 gal 12% HCl / 6% HF. Acdzd 4481-86' w/ 250 gal 12% HCl / 6% HF. Acdzd 4428-35' w/ 500 gal 12% HCl / 6% HF. Acdzd 4390-95' w/ 250 gal 12% HCl / 6% HF. Frac'd 4390-4564' dwn csg w/ 27,000 gal refined oil & 32,000 lbs 20-40 mesh sand in 4 stages. IPP 1/3/80 28 bo, 21 mcf, 0 bw / 24 hrs.

4/85 Tagged TD at 4644'. Acdzd 4390-4564' overall w/ 2500 gal 15% NEFE HCl. Ran 4 1/2" plastic coated AD-1 pkr on 2 3/8" IPC tbg to 4300'. Converted to WIW. Initiated inj 5/85. Prod before: Pmpd 4 bopd, 10 mcfd, 0 bwpd. Inj after: 100 bwpd on 8/30/85.

6/90 CO to 4644'. Acdzd 4390-4564' overall w/ 4000 gal 20% NEFE HCl & 76 RCN BS. Ran AD-1 pkr on 2 3/8" IPC tbg to 4290'. Inj before: Inj P @ 2450#. Inj after: 116 bwpd at 1850#.

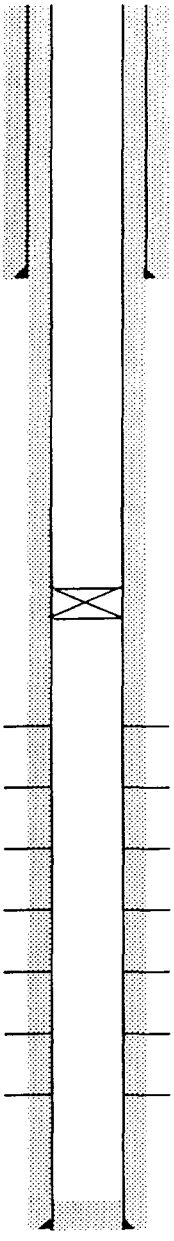
1/97 CO to 4644'. Acdzd 4390-4564' overall w/ 2000 gal 15% Fercheck HCl in 4 stages using 900# RS. Ran Lok-set pkr on 2 3/8" IPC tbg to 4290'. Inj after: Inj P @ 1650#.

Equipment Data as of 1/98:
136 jts 2 3/8" 4.7# J-55 IPC Tubing @ 4274'
Lok-set Packer @ 4274'

Formation Tops:

Queen	3795'	Grayburg Z5	4472'
Grayburg Z1	4238'	Grayburg Z6	4523'
Grayburg Z2	4292'	Grayburg Z7	4552'
Grayburg Z3	4383'	San Andres	4577'
Grayburg Z4	4420'		

Phillips Petroleum Company - Southwest Region
January 24, 2001



GL 4125'
DF 4136'
RKB 4137'

8 5/8" Casing (12 1/4" hole)
set @ 410', 600 sx cmt.
Circ. 110 sx
9 jts - 24# K-55 ST&C

CIBP at 4350'

Grayburg Perforations

4408' - 4413' w/ 3 SPF (15 holes) Z4

4459' - 4464' w/ 2 SPF (10 holes) Z5

4495' - 4499' w/ 2 SPF (8 holes) Z5

4504' - 4507' w/ 2 SPF (6 holes) Z6

4524' - 4531' w/ 2 SPF (14 holes) Z6

4540' - 4543' w/ 2 SPF (6 holes) Z7

4547' - 4550' w/ 2 SPF (6 holes) Z7

4 1/2" Casing (7 7/8" hole)
set @ 4688', 1800 sx cmt.
Circ. 98 sx
115 jts - 11.6# N-80 LT&C

PBTD: 4643'
TD: 4700'

Lease & Well No.: **Leamex #23**

Well Category:	One Status : TA'd Producer
Area:	New Mexico
Subarea:	Caprock
Field :	Maljamar Grayburg/San Andres
API Number:	30-025-26423
Legal Description:	1980' FNL, 1980' FWL, Sec 24, T-17-S, R-33-E
	Lea County, New Mexico
Spudded:	11/23/1979
Completed:	12/17/1979

Well History:

12/79 Perf'd Grayburg 4459-64', 4495-99', 4504-07', 4524-31', 4540-43', and 4547-50' w/ 2 spf (50 holes). Perf'd Grayburg 4408-13' w/ 3 spf (15 holes). Acdzd 4524-50' overall w/ 500 gal 12% HCl / 6% HF. Acdzd 4495-4507' overall w/ 250 gal 12% HCl / 6% HF. Acdzd 4459-64' w/ 250 gal 12% HCl / 6% HF. Acdzd 4408-13' w/ 500 gal 12% HCl / 6% HF. Frac'd 4408-4550' dwn csg w/ 20,000 gal refined oil & 24,000 lbs 20-40 mesh sand in 3 stages. AIR 17 bpm. ISIP 2250#. IPP 1/14/80 36 bo, 23 mcf, 0 bw / 24 hrs.

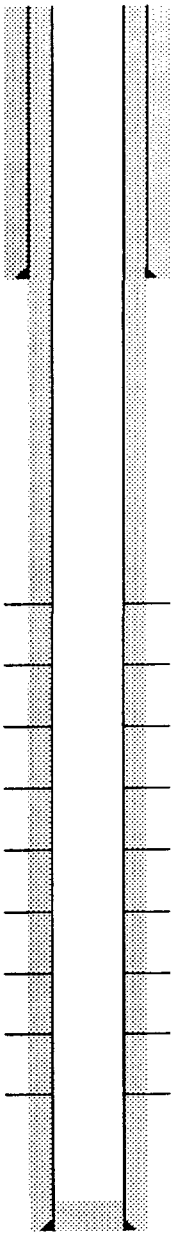
8/94 Set CIBP at 4350'. Circ well w/ fresh wtr containing 1% corrosion inhibitor. Tstd csg & CIBP to 500 psig w/ small leak. Tstd csg to 300# for 30 min. Pressure dropped from 300# to 280# in 30 min. TA'd 8/3/94.

Formation Tops:

Queen	3792'	Grayburg Z5	4450'
Grayburg Z1	4215'	Grayburg Z6	4504'
Grayburg Z2	4269'	Grayburg Z7	4536'
Grayburg Z3	4361'	San Andres	4575'
Grayburg Z4	4400'		

Surface Equipment:
Lufkin 114-143-64 Pumping Unit
No Electric Motor

Phillips Petroleum Company - Southwest Region
January 26, 2001



GL 4113'
DF 4124'
RKB 4125'

8 5/8" Casing (12 1/4" hole)
set @ 400', 400 sx cmt.
Circ. 135 sx
10 jts - 24# K-55 ST&C

Grayburg Perforations

4373' - 4375' w/ 2 SPF (4 holes) Z4

4428' - 4430' w/ 2 SPF (4 holes) Z5

4459' - 4461' w/ 2 SPF (4 holes) Z5

4477' - 4480' w/ 2 SPF (6 holes) Z6

4513' - 4516' w/ 2 SPF (6 holes) Z6

4518' - 4524' w/ 2 SPF (12 holes) Z6

4534' - 4542' w/ 2 SPF (16 holes) Z7

4546' - 4550' w/ 2 SPF (8 holes) Z7

4552' - 4558' w/ 2 SPF (12 holes) Z7

4 1/2" Casing (7 7/8" hole)
set @ 4709', 1600 sx cmt.
Circ. 210 sx
111 jts - 11.6# N-80 LT&C

PBTD: 4662'
TD: 4710'

Lease & Well No.: **Leamex #29**

Well Category:	One Status : Active Producer
Area:	New Mexico
Subarea:	Caprock
Field :	Maljamar Grayburg/San Andres
API Number:	30-025-26852
Legal Description:	1980' FSL, 660' FWL, Sec 24, T-17-S, R-33-E
	Lea County, New Mexico
Spudded:	07/24/1980
Completed:	12/17/1980

Well History:
12/80 Perf'd Grayburg 4373-75', 4424-30', 4459-61', 4477-80', 4513-16', 4518-24', 4534-42', 4546-50', and 4552-58' w/ 2 spf (72 holes). Acdzd 4513-4558' overall w/ 1100 gal 12% HCl / 6% HF. Acdzd 4459-4480' overall w/ 250 gal 12% HCl / 6% HF. Acdzd 4373-4430' overall w/ 250 gal 12% HCl / 6% HF. Frac'd 4373-4558' dwn csg w/ 32,000 gal refined oil and 54,000 lbs 20-40 mesh sand in 3 stages. AIR 25 bpm. Max P 6300#. ISIP 2820#. IPP 12/29/80 77 bo, GOR 1223 (94 mcf), 0 bw / 24 hrs.

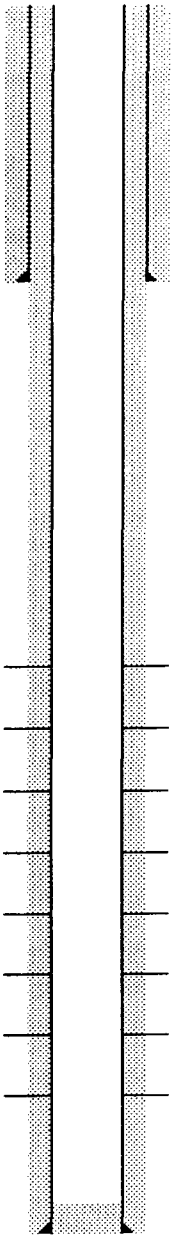
Equipment Data as of 11/98:
148 jts 2 3/8" 4.7# J-55 Tubing @ 4524'
SN @ 4523'
2" x 1 1/4" x 12' rod pump
180 - 3/4" Grade C rods 4500'

Formation Tops:

Queen	3774'	Grayburg Z5	4414'
Grayburg Z1	4182'	Grayburg Z6	4476'
Grayburg Z2	4239'	Grayburg Z7	4529'
Grayburg Z3	4324'	San Andres	4581'
Grayburg Z4	4361'		

Surface Equipment:
Lufkin 160-200-64 Pumping Unit
25 HP Electric Motor

Phillips Petroleum Company - Southwest Region
January 24, 2001



GL 4117'
DF 4128'
RKB 4129'

8 5/8" Casing (12 1/4" hole)
set @ 401', 400 sx cmt.
Circ. 150 sx
10 jts - 24# K-55

Grayburg Perforations

4360' - 4364' w/ 2 SPF (8 holes) Z3

4400' - 4405' w/ 2 SPF (10 holes) Z4

4455' - 4460' w/ 2 SPF (10 holes) Z5

4492' - 4495' w/ 2 SPF (6 holes) Z5

4511' - 4515' w/ 2 SPF (8 holes) Z6

4540' - 4544' w/ 2 SPF (8 holes) Z6

4555' - 4559' w/ 2 SPF (8 holes) Z7

4563' - 4566' w/ 2 SPF (6 holes) Z7

4 1/2" Casing (7 7/8" hole)
set @ 4699', 1450 sx cmt.
Circ. 330 sx
116 jts - 11.6# N-80 LT&C

PBTD: 4626'
TD: 4700'

Lease & Well No.: **Leamex #28**

Well Category:	One Status : Active Producer
Area:	New Mexico
Subarea:	Caprock
Field :	Maljamar Grayburg/San Andres
API Number:	30-025-26851
Legal Description:	1980' FSL, 1980' FEL, Sec 24, T-17-S, R-33-E
	Lea County, New Mexico
Spudded:	07/05/1980
Completed:	12/08/1980

Well History:
12/80 Perf'd Grayburg 4360-64', 4400-05', 4455-60', 4492-95', 4511-15', 4540-44', 4555-59', and 4563-66' w/ 2 spf (64 holes). Acdzd 4492-4566' overall w/ 1000 gal 12% HCl / 6% HF. Acdzd 4455-60' w/ 250 gal 12% HCl / 6% HF. Acdzd 4400-05' w/ 250 gal 12% HCl / 6% HF. Acdzd 4360-64' w/ 250 gal 12% HCl / 6% HF. Frac'd 4360-4566' dwn csg w/ 32,000 gal refined oil and 54,000 lbs 20-40 mesh sand in 3 stages. AIR 19 bpm. Max P 4520#. ISIP 2720#. IPP 1/5/81 93 bo, 158 mcf, 2 bw / 24 hrs.

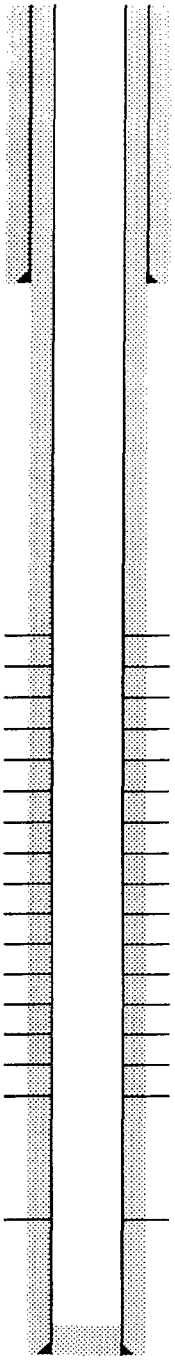
Equipment Data as of 3/92:
148 jts 2 3/8" 4.7# J-55 Tubing @ 4500'
TAC @ 4320', SN @ 4500'
2" x 1 1/2" x 16' rod pump
180 - 3/4" rods

Formation Tops:

Queen	3792'	Grayburg Z5	4445'
Grayburg Z1	4203'	Grayburg Z6	4503'
Grayburg Z2	4254'	Grayburg Z7	4552'
Grayburg Z3	4354'	San Andres	4582'
Grayburg Z4	4394'		

Surface Equipment:
Lufkin 114-143-64 Pumping Unit
20 HP Electric Motor

Phillips Petroleum Company - Southwest Region
January 26, 2001



GL 4107'
DF 4117'
RKB 4118'

8 5/8" Casing (12 1/4" hole)
set @ 350', 400 sx cmt.
Circ. 85 sx
8 jts - 24# K-55 ST&C

Grayburg Perforations

4333' - 4338' w/ 2 SPF (10 holes) Z3
4340' - 4344' w/ 2 SPF (8 holes) Z3
4435' - 4438' w/ 2 SPF (6 holes) Z3
4468' - 4470' w/ 2 SPF (4 holes) Z5
4480' - 4485' w/ 2 SPF (10 holes) Z5
4488' - 4493' w/ 2 SPF (10 holes) Z5
4495' - 4502' w/ 2 SPF (14 holes) Z6
4511' - 4519' w/ 2 SPF (16 holes) Z6
4530' - 4533' w/ 2 SPF (6 holes) Z6
4535' - 4540' w/ 2 SPF (10 holes) Z6
4549' - 4555' w/ 2 SPF (12 holes) Z7
4558' - 4561' w/ 2 SPF (6 holes) Z7
4563' - 4566' w/ 2 SPF (6 holes) Z7
4575' - 4578' w/ 2 SPF (6 holes) Z7
4583' - 4586' w/ 2 SPF (6 holes) Z7
4588' - 4590' w/ 2 SPF (4 holes) Z7

San Andres Perforations

4631' - 4633' w/ 2 SPF (4 holes) SA

4 1/2" Casing (7 7/8" hole)
set @ 4800', 1300 sx cmt.
Circ. 160 sx
111 jts - 11.6# N-80 LT&C

PBTD: 4757'
TD: 4800'

Lease & Well No.: **Leamex #31**

Well Category:	One	Status : Shut in Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-27650	
Legal Description:	660' FSL, 1650' FWL, Sec 24, T-17-S, R-33-E	
	Lea County, New Mexico	
Spudded:	01/30/1982	
Completed:	03/01/1982	

Well History:
2/82 Perf'd Grayburg 4333-38', 4340-44', 4435-38', 4468-70', 4480-85', 4488-93', 4495-4502', 4511-19', 4530-33', 4535-40', 4549-55', 4558-61', 4563-66', 4575-78', 4583-86', 4588-90', and San Andres 4631-33' w/ 2 spf (138 holes). Acdzd 4333-4633' overall w/ 6000 gal 15% NEFE HCl w/ 142 balls. Frac'd 4333-4633' dwn csg w/ 54,000 gal refined oil and 90,000 lbs of RA tagged 20-40 mesh sand in 5 stages. AIR 22 bpm. Max P 3800#. ISIP 2550#. IPF 3/11/82 187 bo, GOR 1379 (258 mcf), 7 bw / 24 hrs.

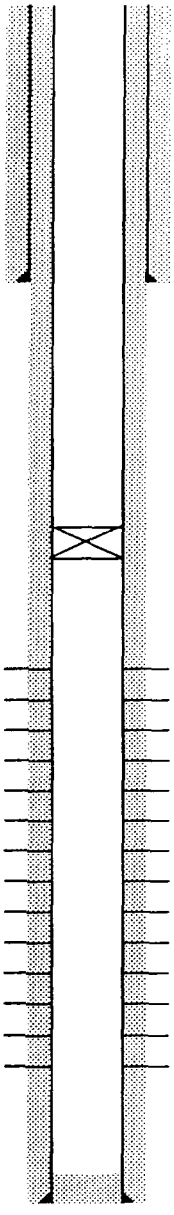
Equipment Data as of 3/96:
150 jts 2 3/8" 4.7# J-55 Tubing @ 4661'
SN @ 4662'
2" x 1 1/2" x 12' rod pump
60 - 7/8" Grade D rods 1500'
125 - 3/4" Grade D rods 3125'

Formation Tops:

Queen	3786'	Grayburg Z5	4422'
Grayburg Z1	4186'	Grayburg Z6	4492'
Grayburg Z2	4232'	Grayburg Z7	4545'
Grayburg Z3	4324'	San Andres	4590'
Grayburg Z4	4365'		

Surface Equipment:
Bethlehem 114-14SA Pumping Unit
15 HP Electric Motor

Phillips Petroleum Company - Southwest Region
February 6, 2001



GL 4106'
DF 4116'
RKB 4117'

8 5/8" Casing (12 1/4" hole)
set @ 379', 400 sx cmt.
Circ. 51 sx
9 jts - 24# K-55 ST&C

CIBP at 4300'

Grayburg Perforations

4364' - 4368' w/ 2 SPF (8 holes) Z3
4402' - 4406' w/ 2 SPF (8 holes) Z4
4460' - 4463' w/ 2 SPF (6 holes) Z5
4494' - 4496' w/ 2 SPF (4 holes) Z5
4508' - 4511' w/ 2 SPF (6 holes) Z6
4518' - 4521' w/ 2 SPF (6 holes) Z6
4524' - 4526' w/ 2 SPF (4 holes) Z6
4541' - 4544' w/ 2 SPF (6 holes) Z6
4546' - 4549' w/ 2 SPF (6 holes) Z6
4564' - 4574' w/ 2 SPF (20 holes) Z7
4581' - 4587' w/ 2 SPF (12 holes) Z7
4592' - 4596' w/ 2 SPF (8 holes) Z7
4598' - 4602' w/ 2 SPF (8 holes) Z7
4613' - 4620' w/ 2 SPF (14 holes) Z7

4 1/2" Casing (7 7/8" hole)
set @ 4800', 1650 sx cmt.
Circ. 107 sx
115 jts - 11.6# N-80 LT&C

PBTD: 4697'
TD: 4800'

Lease & Well No.: **Leamex #32**

Well Category:	One	Status : TA'd
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-27651	
Legal Description:	660' FSL, 660' FEL, Sec 24, T-17-S, R-33-E Lea County, New Mexico	
Spudded:	12/23/1981	
Completed:	02/08/1982	

Well History:

1/82 Cored Grayburg/San Andres 4350-4640'. Perf'd Grayburg 4364-68', 4402-06', 4460-63', 4494-96', 4508-11', 4518-21', 4524-26', 4541-44', 4546-49', 4564-74', 4581-87', 4592-96', 4598-4602', 4613-20' w/ 2 spf (116 holes). Acdzd 4364-4620' overall w/ 5000 gal 15% NEFE HCl. Frac'd 4364-4620' overall dwn csg w/ 54,000 gal refined oil and 90,000 lbs of 20-40 mesh sand in 4 stages using ball sealers. Flshd w/ 75 bbls refined oil. Back flwd balls & overflshd w/ 30 bbls refined oil. AIR 22 bpm. Max P 4200#. Min P 3600#. ISIP 2800#. IPP 2/22/82 183 bo, GOR 1826 (334 mcf), 19 bw / 24 hrs.

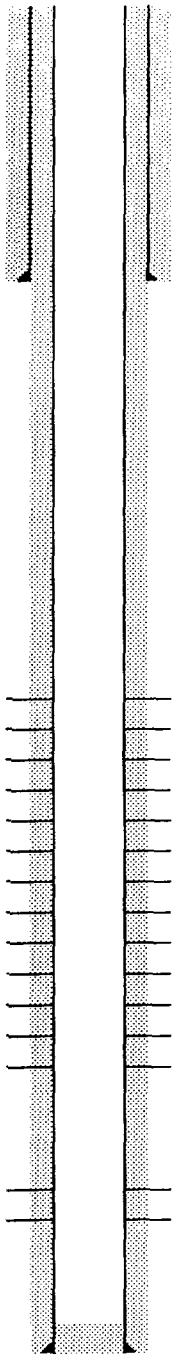
2/95 Set CIBP at 4300'. Circ well w/ fresh wtr containing 1% corrosion inhibitor. Tstd csg to 500 psig for 30 min. OK. TA'd 2/7/95.

Formation Tops:

Queen	3796'	Grayburg Z5	4446'
Grayburg Z1	4210'	Grayburg Z6	4503'
Grayburg Z2	4269'	Grayburg Z7	4555'
Grayburg Z3	4351'	San Andres	4624'
Grayburg Z4	4392'		

Surface Equipment:
None

Phillips Petroleum Company - Southwest Region
February 7, 2001



GL 4125'
DF 4136'
RKB 4137'

8 5/8" Casing (12 1/4" hole)
set @ 1540', 1000 sx cmt.
Circ. 70 sx
37 jts - 24# K-55 ST&C

Grayburg Perforations

4216' - 4218' w/ 2 SPF (4 holes) Z1
4264' - 4270' w/ 2 SPF (12 holes) Z2
4328' - 4338' w/ 2 SPF (20 holes) Z3
4370' - 4375' w/ 2 SPF (10 holes) Z4
4385' - 4387' w/ 2 SPF (4 holes) Z4
4432' - 4437' w/ 2 SPF (10 holes) Z5
4481' - 4498' w/ 2 SPF (34 holes) Z5-6
4507' - 4514' w/ 2 SPF (14 holes) Z6
4519' - 4523' w/ 2 SPF (8 holes) Z6
4525' - 4528' w/ 2 SPF (6 holes) Z6
4529' - 4533' w/ 2 SPF (8 holes) Z6
4538' - 4551' w/ 2 SPF (26 holes) Z7
4555' - 4564' w/ 2 SPF (18 holes) Z7

San Andres Perforations

4603' - 4613' w/ 2 SPF (20 holes) SA
4615' - 4623' w/ 2 SPF (16 holes) SA

5 1/2" Casing (7 7/8" hole)
set @ 4800', 1350 sx cmt.
Circ. 225 sx
119 jts - 15.5# K-55 ST&C

PBTD: 4754'
TD: 4800'

Lease & Well No.: **Leamex #52**

Well Category:	One	Status : Active Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-30467	
Legal Description:	660' FNL, 660' FWL, Sec 25, T-17-S, R-33-E	
	Lea County, New Mexico	
Spudded:	10/02/1988	
Completed:	10/19/1988	

Well History:
10/88 Perf'd Grayburg 4216-18', 4264-70', 4328-38', 4370-75', 4385-87', 4432-37', 4481-98', 4507-14', 4519-23', 4525-28', 4529-33', 4538-51', 4555-64', and San Andres 4603-13', 4615-23' w/ 2 spf (210 holes). Acdzd 4216-4623' overall w/ 11,500 gal 15% NEFE HCl w/ 240 balls. Frac'd 4216-4623' dwn csg w/ 60,000 gal 40# gelled x-linked 2% KCl wtr and 108,000 lbs of 16-30 mesh sand in 2 stages. Tagged frac stages w/ 2 different RA isotopes. AIR 41 bpm. Max P 2830#. ISIP 2190#. CO sand from 4588-4700'. IPP 11/22/88 82 bo, GOR 4671 (383 mcf), 1 bw / 24 hrs.

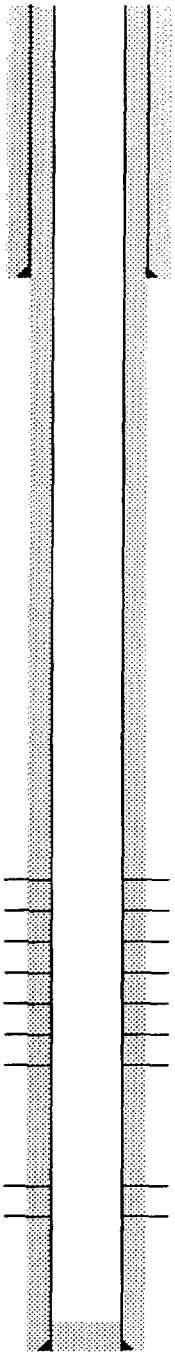
Equipment Data as of 10/94:
147 jts 2 3/8" 4.7# J-55 Tubing @ 4618'
TAC @ 4050', SN @ 4619'
2" x 1 1/4" x 22' rod pump
55 - 7/8" Grade D rods 1375'
128 - 3/4" Grade D rods 3200'

Formation Tops:

Queen	3797'	Grayburg Z5	4414'
Grayburg Z1	4186'	Grayburg Z6	4486'
Grayburg Z2	4235'	Grayburg Z7	4539'
Grayburg Z3	4318'	San Andres	4566'
Grayburg Z4	4362'		

Surface Equipment:
Lufkin TC1A (114-143-64 Comparable) Pumping Unit
25 HP Electric Motor

Phillips Petroleum Company - Southwest Region
February 7, 2001



GL 4090'
DF 4100'
RKB 4101'

8 5/8" Casing (12 1/4" hole)
set @ 1501', 1000 sx cmt.
Circ. 125 sx
37 jts - 32# K-55 ST&C

Grayburg Perforations

4354' - 4358' w/ 2 SPF (8 holes) Z3
4454' - 4458' w/ 2 SPF (8 holes) Z5
4518' - 4526' w/ 2 SPF (16 holes) Z6
4542' - 4546' w/ 2 SPF (8 holes) Z6
4558' - 4562' w/ 2 SPF (8 holes) Z6
4575' - 4577' w/ 2 SPF (4 holes) Z6
4595' - 4599' w/ 2 SPF (8 holes) Z7

San Andres Perforations

4645' - 4647' w/ 2 SPF (4 holes) SA
4656' - 4664' w/ 2 SPF (16 holes) SA

4 1/2" Casing (7 7/8" hole)
set @ 4791', 1800 sx cmt.
Circ. 25 sx
17 jts - 11.6# N-80 LT&C
13 jts - 11.6# K-55 LT&C
89 jts - 11.6# K-55 ST&C

PBTD: 4757'
TD: 4797'

Lease & Well No.: **Leamex #37**

Well Category:	One	Status : Active Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-29115	
Legal Description:	860' FNL, 2055' FEL, Sec 25, T-17-S, R-33-E	
	Lea County, New Mexico	
Spudded:	12/13/1985	
Completed:	12/28/1985	

Well History:

12/85 Encountered 5 gpm waterflow at 4431'. Perf'd Grayburg 4354-58', 4454-58', 4518-26', 4542-46', 4558-62', 4575-77', 4595-99', and San Andres 4645-47', 4656-64' w/ 2 spf (80 holes). Acdzd 4645-64' overall w/ 1200 gal 15% NEFE HCl. Acdzd 4354-4599' overall w/ 3000 gal 7.5% NEFE HCl. Frac'd 4354-4644' dwn csg w/ 66,000 gal gelled 2% KCl wtr and 121,500 lbs of 20-40 mesh sand in 3 stages. AIR 22 bpm. Max P 3820#. ISIP 2620#. IPP 1/23/86 45 bo, GOR 266 (12 mcf), 2 bw / 24 hrs.

3/86 Perf'd 2 squeeze holes @ 3770' to shut off surface annular waterflow. Had 1/2 bpm wtr flow. Sqzd 3770' w/ 200 sx Cl "C" cmt. Perf'd 2 squeeze holes @ 1300'. Spot 5 sx Cl "C" cmt across interval & pressure up to 500 psig. Drld cmt 1294-1304'. Tstd csg to 1000 psig. Held OK. Drld cmt 3700-75'. Tstd csg to 1000 psig. Held OK. Prod after: Pmpd 24 bo, 11 mcfg, 1 bw/ 24 hrs on 3/17/86.

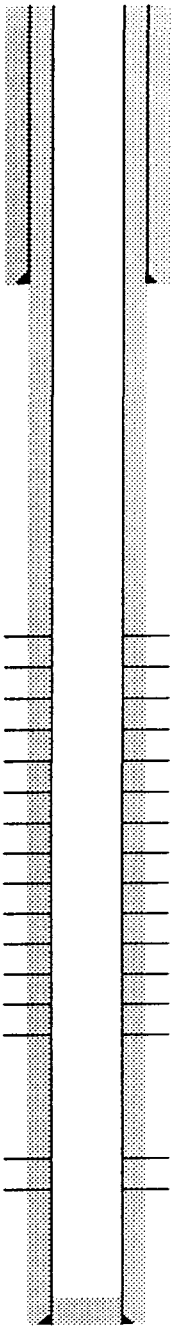
Equipment Data as of 9/91:
152 jts 2 3/8" 4.7# J-55 Tubing @ 4680'
SN @ 4680'
2" x 1 1/4" x 16' rod pump
57 - 7/8" Grade C rods 1425'
129 - 3/4" Grade C rods 3225'

Formation Tops:

Queen	3815'	Grayburg Z5	4439'
Grayburg Z1	4204'	Grayburg Z6	4510'
Grayburg Z2	4248'	Grayburg Z7	4584'
Grayburg Z3	4337'	San Andres	4605'
Grayburg Z4	4380'		

Surface Equipment:
Lufkin 228-200-74 Pumping Unit
25 HP Electric Motor

Phillips Petroleum Company - Southwest Region
February 7, 2001



GL 4115'
DF 4126'
RKB 4127'

8 5/8" Casing (12 1/4" hole)
set @ 1512', 1000 sx cmt.
Circ. 55 sx
36 jts - 24# K-55 ST&C

Grayburg Perforations

4249' - 4252' w/ 2 SPF (6 holes) Z2
4265' - 4271' w/ 2 SPF (12 holes) Z2
4273' - 4276' w/ 2 SPF (6 holes) Z2
4278' - 4281' w/ 2 SPF (6 holes) Z2
4321' - 4325' w/ 2 SPF (8 holes) Z3
4327' - 4330' w/ 2 SPF (6 holes) Z3
4358' - 4361' w/ 2 SPF (6 holes) Z4
4364' - 4369' w/ 2 SPF (10 holes) Z4
4426' - 4433' w/ 2 SPF (14 holes) Z5
4463' - 4468' w/ 2 SPF (10 holes) Z5
4485' - 4497' w/ 2 SPF (24 holes) Z6
4529' - 4531' w/ 2 SPF (4 holes) Z6
4541' - 4552' w/ 2 SPF (22 holes) Z7
4556' - 4559' w/ 2 SPF (6 holes) Z7

San Andres Perforations

4578' - 4586' w/ 2 SPF (16 holes) Z6
4654' - 4662' w/ 2 SPF (16 holes) SA

5 1/2" Casing (7 7/8" hole)
set @ 4800', 1500 sx cmt.
Circ. 200 sx
138 jts - 15.5# K-55 ST&C

PBTD: 4752'
TD: 4800'

Lease & Well No.: **Leamex #53**

Well Category:	One	Status : Shut in Producer
Area:	New Mexico	
Subarea:	Caprock	
Field :	Maljamar Grayburg/San Andres	
API Number:	30-025-30453	
Legal Description:	1980' FNL, 1980' FWL, Sec 25, T-17-S, R-33-E	
	Lea County, New Mexico	
Spudded:	09/24/1988	
Completed:	10/12/1988	

Well History:
10/88 Perf'd Grayburg 4249-52', 4265-71', 4273-76', 4278-81', 4321-25', 4327-30', 4358-61', 4364-69', 4426-33', 4463-68', 4485-97', 4529-31', 4541-52', 4556-59' and San Andres 4578-86', 4654-62' w/ 2 spf (172 holes). Acdzd 4249-4662' overall w/ 9000 gal 15% NEFE HCl. Frac'd 4249-4662' overall dwn csg w/ 91,200 gal 30# gelled x-linked 2% KCl wtr and 171,900 lbs of 20-40 mesh sand in 3 stages. AIR 31 bpm. Max P 4800#. Avg P 3860#. ISIP 3400#. CO sand to 4720'. IPP 11/22/88 23 bo, 16 mcfg, and 6 bw / 24 hrs.

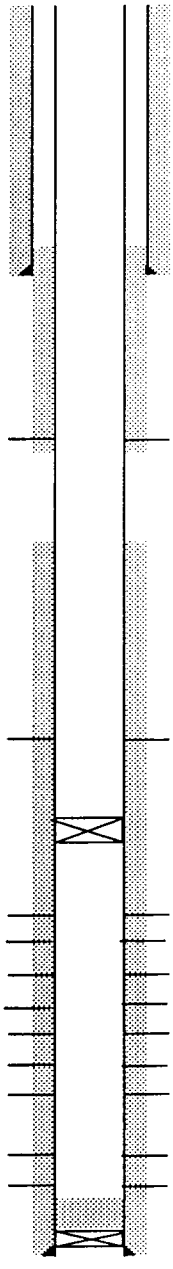
Equipment Data as of 1/93:
148 jts 2 3/8" 4.7# J-55 Tubing @ 4660'
SN @ 4660', TAC @ 4077'
2" x 1 1/4" x 16' rod pump
56 - 7/8" Grade D rods 1400'
129 - 3/4" Grade D rods 3225'

Formation Tops:

Queen	3813'	Grayburg Z5	4414'
Grayburg Z1	4191'	Grayburg Z6	4484'
Grayburg Z2	4230'	Grayburg Z7	4539'
Grayburg Z3	4317'	San Andres	4570'
Grayburg Z4	4355'		

Surface Equipment:
Lufkin 320-74-27 Pumping Unit
25 HP Electric Motor

Phillips Petroleum Company - Southwest Region
24-Jan-01



KB 4087'
DF 4086'
GL 4076'

12 1/4" hole

9 jts. ST&C
8 5/8" Casing 24#, K-55
set @ 363', 400 sx cmt.
Circ. 55 sx

7-7/8" hole

Perf'd w/ 4 spf @ 1000'
Sqzd w/ 1550 sx cmt
TOC @ 353' by TS

Perf'd w/ 4 spf @ 3775'
Sqzd w/ 145 sx cmt

CIBP @ 4400'

Grayburg Perfs:
4455-4459' Z5
4514-4520' Z6
4530-4536' Z6
4551-4555' Z6
4563-4567' Z6
4573-4577' Z6
4589-4594' Z7
San Andres Perfs:
4640-4642'
4655-4661'

CIBP @ 4750' w/ 20' cmt on top

PBTD: 4730'
TD: 4800'

4-1/2" 11.6# K-55 @ 4800'
Cmt'd w/ 3150 sx. TOC @ 1850' by CBL

Lease & Well No.: **Leamex #38**

Well Category: One Status : TA'd
Area: New Mexico
Subarea: Buckeye Field : Maljamar Grayburg/San Andres
API Number 30-025-29116
Legal Description: 980' FNL, 990' FEL, 1Sec 25, T-17-S, R-33-E
Lea County, New Mexico
Spudded: 11/23/1985
Completed: 05/12/1986

Well History:

12/85 Perf'd Grayburg 4455-59', 4514-20', 4530-36', 4551-55', 4563-67', 4573-77', 4589-94', and San Andres 4640-42', 4655-61' w/ 2 spf (80 holes). Acidized 4640-61' overall w/ 1000 gal 15% NEFE HCl. Communicated during flush. Set pkr @ 4200', reversed out 10 bbl, & pumped 3000 gal 7.5% NEFE HCl w/ 16 balls. ISIP 2200#, Max P 4300#, Rate 3.5 bpm. Frac'd 4455-4661' overall w/ 66,000 gal 2% gel KCL and 121,500# 20/40 mesh sand in 3 stages. ISIP 2600#, Max P 2950#, rate 20 bpm.

4/86 Perf'd 3775' w/ 4 spf. Sqzd 3775' w/ 85 sx @ 3100#. Perf'd 1000' w/ 4 spf. Sqzd 1000' w/ 400 sx @ 600#. Resqzd w/ 200 sx @ 1000#. Resqzd w/ 400sx @ 2700#. Resqzd w/ 400sx. Resqzd w/ 100 sx at 3600#. Resqzd w/ 50 sx @ 2100#. Tested OK @1000#. Set pkr at 3290'. Est injection rate @ 2/10 bpm @ 4000#. Pumped 5 bbls 15% HCl. Set cmt retainer @ 3690'. Sqzd w/ 60 sx cmt. Cleaned out to 4730'.

2/95 Set CIBP @ 4400'. Circ well w/ fresh water containing 1% corrosion inhibitor. TA'd well.

Formation Tops:

Queen	3812'	Grayburg Zone 5	4432'
Grayburg Zone 1	4201'	Grayburg Zone 6	4512'
Grayburg Zone 2	4245'	Grayburg Zone 7	4582'
Grayburg Zone 3	4328'	San Andres	4612'
Grayburg Zone 4	4373'		

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

VII. PROPOSED OPERATION

1. (See Attached Step Rate Test Data for offset wells Leamex #7 and Leamex #19 for basis behind proposed injection rate and pressure.)

   Average Daily Rate of Fluids to be Injected: 800 BWPD/Well
   Maximum Daily Rate of Fluids to be Injected: 1490 BWPD/Well

2. This will be a closed system.

3. Average Injection Pressure: 2000 psi
   Maximum Injection Pressure: 2140 psi

4. Injection fluid will be obtained from the following sources:

   Conoco
   Fresh Water: Water analysis reports, prepared by John Offutt of Unichem, are attached. Compatibility test with produced water from Maljamar, SWD are also included.

   Eddy Potash
   Fresh Water: Water analysis reports, prepared by John Offutt of Unichem, are attached. Compatibility test with produced water from Leamex Battery #8 are also included.

   Leamex Lease
   Produced Water: Compatibility tests with Conoco and Eddy Potash fresh water are attached.

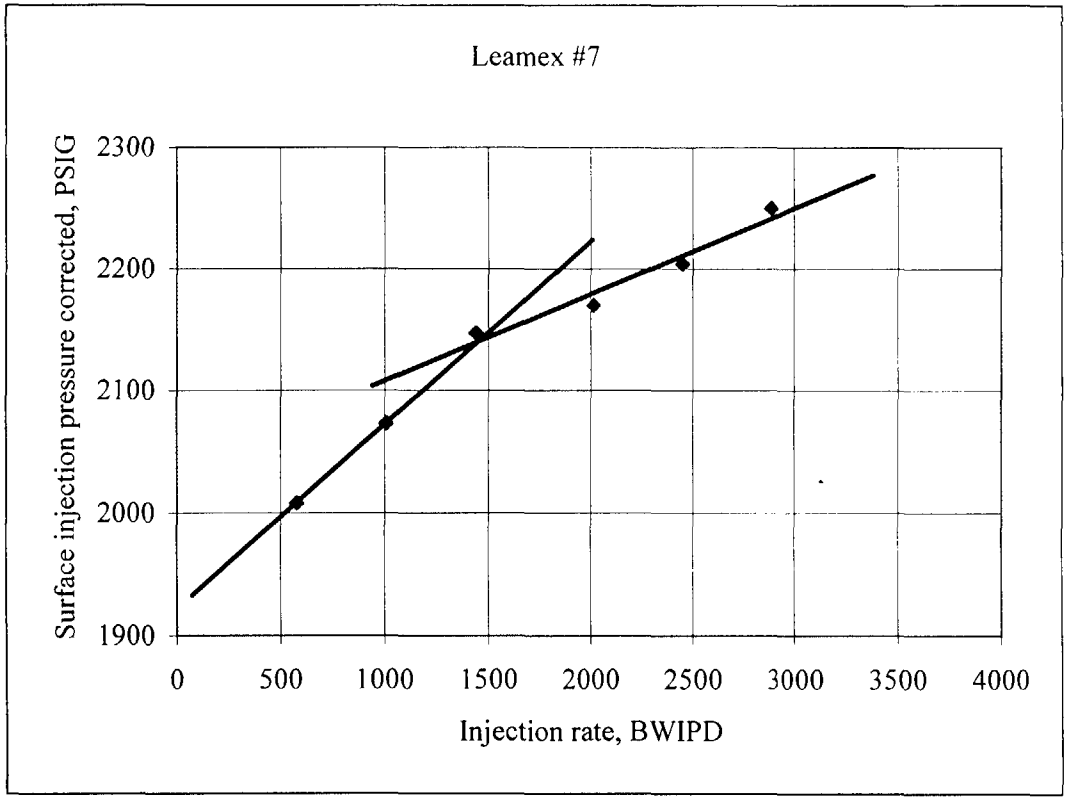
5. Not Applicable.

Phillips Petroleum Company
Leamex Well No. 7
Unit F, Section 24, T-17-S, R-33-E

Leamex #7 Zones 3-7, 4,375 - 4,606'

Test was performed on 03/09/01

Injection Rate BWIPD	Surface Pressure PSIG*	Line 1	Line 2
0.0	0		
288	1881		
576	2008	2007.99	
1008	2073	2073.00	
1440	2147		2139.08
2016	2170		2180.04
2448	2204		2210.75
2880	2250		2241.47



Line 1
m = 0.1505
b = 1921.3
R^2 = 1

Line 2
m = 0.0711
b = 2036.7
R^2 = 0.9532

Intersection of Lines = 2140 PSIG

* Pressures corrected for friction.

Test was performed August 1985.

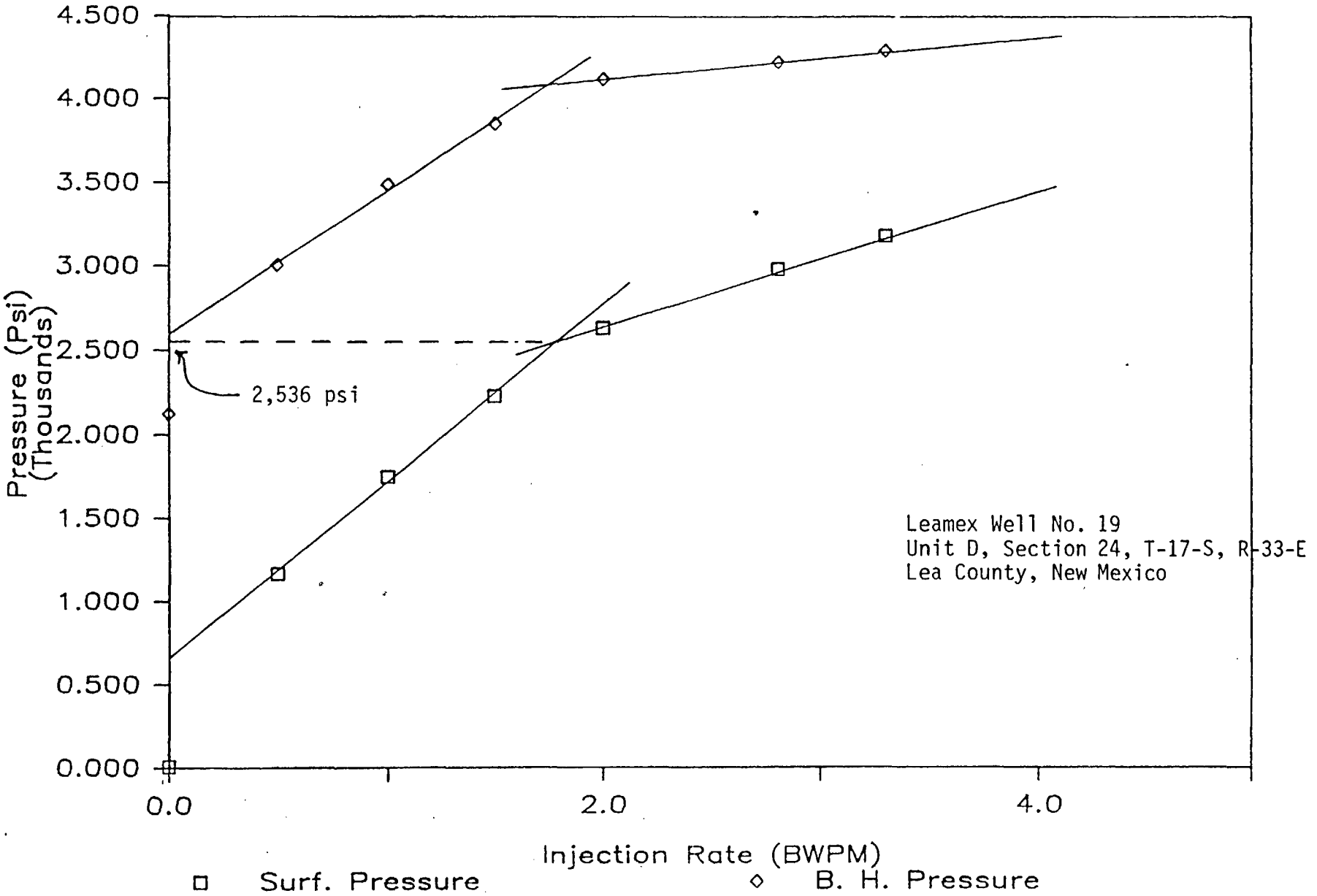
Phillips Petroleum Company
Leamex Well No. 19
Unit D, Section 24, T-17-S, R-33-E
Lea county, New Mexico

Rate (BPM)	Surface Pressure (psi)*	Hydro-static Pressure (psi)	BHP (psi)*
0.0	125	2002	2127
0.5	1170	2002	3007
1.0	1750	2002	3490
1.5	2230	2002	3853
2.0	2630	2002	4121
2.8	2980	2002	4223
3.3	3180	2002	4289

* Measured

STEP-RATE TEST

Leamex Well No. 19



Analytical Laboratory Report for:

Phillips

UNICHEM
A Division of BJ Services Company

UNICHEM Representative: John Offutt

Production Water Analysis

Listed below please find water analysis report from: Conoco, Fresh Water

Lab Test No:	2001103717	Sample Date:	01/26/2001
Specific Gravity:	1.001		
TDS:	435		
pH:	7.20		

Cations:	mg/L	as:
Calcium	62	(Ca^{++})
Magnesium	10	(Mg^{++})
Sodium	36	(Na^{+})
Iron	0.00	(Fe^{++})
Barium	0.00	(Ba^{++})
Strontium	0.42	(Sr^{++})
Manganese	0.00	(Mn^{++})
Anions:	**mg/L**	**as:**
Bicarbonate	229	(HCO_3^{-})
Sulfate	43	($SO_4^{=}$)
Chloride	55	(Cl^{-})
Gases:		
Carbon Dioxide	0	(CO_2)
Hydrogen Sulfide	0	(H_2S)

Comments:
:Laboratory Measured pH :Laboratory Measured Bicarbonate

Analytical Laboratory Report for:

Phillips

UNICHEM
A Division of BJ Services Company

UNICHEM Representative: John Offutt

Production Water Analysis

Listed below please find water analysis report from: Potash Eddy, 7

Lab Test No:	2001103247	Sample Date:	01/23/2001
Specific Gravity:	1.002		
TDS:	530		
pH:	7.21		
Resistivity:	.021 @ 70 Deg/F	ohms/M	

Cations:	mg/L	as:
Calcium	82	(Ca^{++})
Magnesium	21	(Mg^{++})
Sodium	246	(Na^{+})
Iron	0.00	(Fe^{++})
Barium	0.00	(Ba^{++})
Strontium	1.06	(Sr^{++})
Manganese	0.00	(Mn^{++})
Anions:	**mg/L**	**as:**
Bicarbonate	73	(HCO_3^{-})
Sulfate	37	($SO_4^{=}$)
Chloride	70	(Cl^{-})
Gases:		
Carbon Dioxide		(CO_2)
Hydrogen Sulfide		(H_2S)

Comments:

Analytical Laboratory Report for:

Phillips

UNICHEM
A Division of BJ Services Company

UNICHEM Representative: John Offutt

Production Water Analysis

Listed below please find water analysis report from: Leamax, 8 (Btry 8)

Lab Test No:	2001103245	Sample Date:	01/23/2001
Specific Gravity:	1.133		
TDS:	204492		
pH:	6.66		
Resistivity:	.104 @ 70 Deg/F	ohms/M	

Cations:	mg/L	as:
Calcium	6588	(Ca^{++})
Magnesium	7010	(Mg^{++})
Sodium	67642	(Na^{+})
Iron	9.72	(Fe^{++})
Barium	0.74	(Ba^{++})
Strontium	160.13	(Sr^{++})
Manganese	2.18	(Mn^{++})
Anions:	**mg/L**	**as:**
Bicarbonate	780	(HCO_3^{-})
Sulfate	1300	($SO_4^{=}$)
Chloride	121000	(Cl^{-})
Gases:		
Carbon Dioxide	100	(CO_2)
Hydrogen Sulfide	35	(H_2S)

Comments:

Analytical Laboratory Report for:

Phillips

UNICHEM
A Division of BJ Services Company

UNICHEM Representative: John Offutt

Production Water Analysis

Listed below please find water analysis report from: Maljamar, SWD

Lab Test No:	2001103246	Sample Date:	01/23/2001
Specific Gravity:	1.144		
TDS:	220661		
pH:	5.84		
Resistivity:	.119 @ 70 Deg/F	ohms/M	

Cations:	mg/L	as:
Calcium	2490	(Ca^{++})
Magnesium	748	(Mg^{++})
Sodium	88364	(Na^{+})
Iron	2.27	(Fe^{++})
Barium	0.14	(Ba^{++})
Strontium	55.50	(Sr^{++})
Manganese	0.13	(Mn^{++})
Anions:	**mg/L**	**as:**
Bicarbonate	1000	(HCO_3^{-})
Sulfate	2900	($SO_4^{=}$)
Chloride	125000	(Cl^{-})
Gases:		
Carbon Dioxide	276	(CO_2)
Hydrogen Sulfide	50	(H_2S)

Comments:

DownHole SAT(tm)

MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Maljamar (50%) 2) Conoco FW (50%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.379	Calcite (CaCO3)	-0.0480
Aragonite (CaCO3)	0.322	Aragonite (CaCO3)	-0.0619
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-23.80
Strontianite (SrCO3)	0.00915	Strontianite (SrCO3)	-3.80
Magnesite (MgCO3)	0.140	Magnesite (MgCO3)	-0.152
Anhydrite (CaSO4)	0.495	Anhydrite (CaSO4)	-260.36
Gypsum (CaSO4*2H2O)	0.520	Gypsum (CaSO4*2H2O)	-194.72
Barite (BaSO4)	0.254	Barite (BaSO4)	-0.122
Celestite (SrSO4)	0.0987	Celestite (SrSO4)	-141.25
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-356.06
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-7.42
Silica (SiO2)	0.00	Silica (SiO2)	-43.07
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.558
Magnesium silicate	0.00	Magnesium silicate	-108.27
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	0.387	Siderite (FeCO3)	-0.0488
Halite (NaCl)	0.0515	Halite (NaCl)	-131770
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-74639
Iron sulfide (FeS)	0.121	Iron sulfide (FeS)	0.166

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	-0.0781	Calcium	1276	1152
Ryznar	5.97	Barium	0.0700	0.0700
Puckorius	2.78	Carbonate	1.08	0.0505
Larson-Skold Index	202.24	Phosphate	0.00	0.00
Stiff Davis Index	-0.596	Sulfate	1472	755.02
Oddo-Tomson	-1.12			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)
MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Maljamar (80%) 2) Conoco FW (20%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.541	Calcite (CaCO3)	-0.0145
Aragonite (CaCO3)	0.459	Aragonite (CaCO3)	-0.0202
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-25.15
Strontianite (SrCO3)	0.00761	Strontianite (SrCO3)	-2.96
Magnesite (MgCO3)	0.225	Magnesite (MgCO3)	-0.0497
Anhydrite (CaSO4)	1.17	Anhydrite (CaSO4)	53.37
Gypsum (CaSO4*2H2O)	1.09	Gypsum (CaSO4*2H2O)	128.28
Barite (BaSO4)	0.353	Barite (BaSO4)	-0.121
Celestite (SrSO4)	0.137	Celestite (SrSO4)	-154.93
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-283.32
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-4.54
Silica (SiO2)	0.00	Silica (SiO2)	-35.13
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.321
Magnesium silicate	0.00	Magnesium silicate	-92.58
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	0.336	Siderite (FeCO3)	-0.0374
Halite (NaCl)	0.183	Halite (NaCl)	-80630
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-75978
Iron sulfide (FeS)	0.116	Iron sulfide (FeS)	0.334

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	0.309	Calcium	2004	1736
Ryznar	5.00	Barium	0.112	0.112
Puckorius	1.35	Carbonate	1.36	0.0295
Larson-Skold Index	235.27	Phosphate	0.00	0.00
Stiff Davis Index	0.295	Sulfate	2329	860.10
Oddo-Tomson	-0.766			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
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DownHole SAT(tm)
MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Maljamar (20%) 2) Conoco FW (80%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.279	Calcite (CaCO3)	-0.138
Aragonite (CaCO3)	0.236	Aragonite (CaCO3)	-0.172
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-19.05
Strontianite (SrCO3)	0.0106	Strontianite (SrCO3)	-4.40
Magnesite (MgCO3)	0.0877	Magnesite (MgCO3)	-0.467
Anhydrite (CaSO4)	0.132	Anhydrite (CaSO4)	-593.26
Gypsum (CaSO4*2H2O)	0.153	Gypsum (CaSO4*2H2O)	-565.34
Barite (BaSO4)	0.104	Barite (BaSO4)	-0.142
Celestite (SrSO4)	0.0414	Celestite (SrSO4)	-129.86
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-379.18
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-12.23
Silica (SiO2)	0.00	Silica (SiO2)	-51.40
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-1.01
Magnesium silicate	0.00	Magnesium silicate	-116.37
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	0.409	Siderite (FeCO3)	-0.0641
Halite (NaCl)	0.00685	Halite (NaCl)	-174578
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-66200
Iron sulfide (FeS)	0.149	Iron sulfide (FeS)	0.0426

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	-0.399	Calcium	547.60	510.80
Ryznar	7.00	Barium	0.0280	0.0280
Puckorius	4.53	Carbonate	0.805	0.0919
Larson-Skold Index	129.36	Phosphate	0.00	0.00
Stiff Davis Index	-0.890	Sulfate	614.40	423.29
Oddo-Tomson	-1.10			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

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P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)
MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Maljamar (80%) 2) Potash Eddy (20%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.457	Calcite (CaCO3)	-0.0171
Aragonite (CaCO3)	0.388	Aragonite (CaCO3)	-0.0227
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-25.16
Strontianite (SrCO3)	0.00641	Strontianite (SrCO3)	-2.95
Magnesite (MgCO3)	0.190	Magnesite (MgCO3)	-0.0515
Anhydrite (CaSO4)	1.18	Anhydrite (CaSO4)	54.11
Gypsum (CaSO4*2H2O)	1.10	Gypsum (CaSO4*2H2O)	128.88
Barite (BaSO4)	0.352	Barite (BaSO4)	-0.122
Celestite (SrSO4)	0.136	Celestite (SrSO4)	-155.23
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-283.17
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-4.53
Silica (SiO2)	0.00	Silica (SiO2)	-35.12
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.320
Magnesium silicate	0.00	Magnesium silicate	-92.55
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	0.283	Siderite (FeCO3)	-0.0405
Halite (NaCl)	0.183	Halite (NaCl)	-80536
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-75989
Iron sulfide (FeS)	0.0904	Iron sulfide (FeS)	0.177

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	0.236	Calcium	2008	1744
Ryznar	5.09	Barium	0.112	0.112
Puckorius	1.40	Carbonate	1.14	0.0248
Larson-Skold Index	244.74	Phosphate	0.00	0.00
Stiff Davis Index	0.223	Sulfate	2327	857.98
Oddo-Tomson	-0.839			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)

MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Maljamar (20%) 2) Potash Eddy (80%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.0970	Calcite (CaCO3)	-0.167
Aragonite (CaCO3)	0.0822	Aragonite (CaCO3)	-0.200
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-19.15
Strontianite (SrCO3)	0.00369	Strontianite (SrCO3)	-4.38
Magnesite (MgCO3)	0.0312	Magnesite (MgCO3)	-0.467
Anhydrite (CaSO4)	0.134	Anhydrite (CaSO4)	-587.50
Gypsum (CaSO4*2H2O)	0.156	Gypsum (CaSO4*2H2O)	-558.91
Barite (BaSO4)	0.102	Barite (BaSO4)	-0.146
Celestite (SrSO4)	0.0423	Celestite (SrSO4)	-131.49
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-379.60
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-12.01
Silica (SiO2)	0.00	Silica (SiO2)	-51.35
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.976
Magnesium silicate	0.00	Magnesium silicate	-116.40
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	0.136	Siderite (FeCO3)	-0.0961
Halite (NaCl)	0.00700	Halite (NaCl)	-174391
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-66360
Iron sulfide (FeS)	0.0437	Iron sulfide (FeS)	-0.317

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	-0.861	Calcium	563.60	531.42
Ryznar	7.62	Barium	0.0280	0.0280
Puckorius	5.11	Carbonate	0.274	0.0308
Larson-Skold Index	195.34	Phosphate	0.00	0.00
Stiff Davis Index	-1.35	Sulfate	609.60	417.06
Oddo-Tomson	-1.57			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)

MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Maljamar (50%) 2) Potash Eddy (50%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.229	Calcite (CaCO3)	-0.0588
Aragonite (CaCO3)	0.194	Aragonite (CaCO3)	-0.0725
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-23.83
Strontianite (SrCO3)	0.00549	Strontianite (SrCO3)	-3.79
Magnesite (MgCO3)	0.0851	Magnesite (MgCO3)	-0.158
Anhydrite (CaSO4)	0.499	Anhydrite (CaSO4)	-256.47
Gypsum (CaSO4*2H2O)	0.523	Gypsum (CaSO4*2H2O)	-190.81
Barite (BaSO4)	0.252	Barite (BaSO4)	-0.123
Celestite (SrSO4)	0.0990	Celestite (SrSO4)	-141.95
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-355.79
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-7.37
Silica (SiO2)	0.00	Silica (SiO2)	-43.04
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.552
Magnesium silicate	0.00	Magnesium silicate	-108.21
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	0.230	Siderite (FeCO3)	-0.0614
Halite (NaCl)	0.0519	Halite (NaCl)	-131544
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-74673
Iron sulfide (FeS)	0.0596	Iron sulfide (FeS)	-0.191

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	-0.298	Calcium	1286	1168
Ryznar	6.25	Barium	0.0700	0.0700
Puckorius	2.98	Carbonate	0.645	0.0300
Larson-Skold Index	233.05	Phosphate	0.00	0.00
Stiff Davis Index	-0.815	Sulfate	1469	750.37
Oddo-Tomson	-1.34			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)

MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Leamex (50%) 2) Potash Eddy (50%)

Blay 8

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	2.25	Calcite (CaCO3)	0.0346
Aragonite (CaCO3)	1.90	Aragonite (CaCO3)	0.0296
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-24.19
Strontianite (SrCO3)	0.0538	Strontianite (SrCO3)	-1.56
Magnesite (MgCO3)	3.03	Magnesite (MgCO3)	0.0352
Anhydrite (CaSO4)	0.330	Anhydrite (CaSO4)	-171.33
Gypsum (CaSO4*2H2O)	0.352	Gypsum (CaSO4*2H2O)	-141.61
Barite (BaSO4)	0.309	Barite (BaSO4)	-0.488
Celestite (SrSO4)	0.0654	Celestite (SrSO4)	-242.22
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-358.29
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-4.48
Silica (SiO2)	0.00	Silica (SiO2)	-44.15
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.175
Magnesium silicate	0.00	Magnesium silicate	-108.08
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	3.45	Siderite (FeCO3)	0.0510
Halite (NaCl)	0.0383	Halite (NaCl)	-137483
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-75987
Iron sulfide (FeS)	6.29	Iron sulfide (FeS)	2.60

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	0.922	Calcium	3335	3231
Ryznar	4.73	Barium	0.370	0.370
Puckorius	2.54	Carbonate	4.62	0.107
Larson-Skold Index	288.45	Phosphate	0.00	0.00
Stiff Davis Index	0.426	Sulfate	668.50	182.70
Oddo-Tomson	-0.127			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)

MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Leamex (80%) Blay8

2) Potash Eddy (20%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	3.75	Calcite (CaCO3)	0.0294
Aragonite (CaCO3)	3.18	Aragonite (CaCO3)	0.0275
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-25.68
Strontianite (SrCO3)	0.0488	Strontianite (SrCO3)	-1.14
Magnesite (MgCO3)	5.87	Magnesite (MgCO3)	0.0280
Anhydrite (CaSO4)	0.614	Anhydrite (CaSO4)	-46.98
Gypsum (CaSO4*2H2O)	0.589	Gypsum (CaSO4*2H2O)	-27.59
Barite (BaSO4)	0.313	Barite (BaSO4)	-0.761
Celestite (SrSO4)	0.0661	Celestite (SrSO4)	-283.85
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-284.60
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-2.67
Silica (SiO2)	0.00	Silica (SiO2)	-36.78
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.0959
Magnesium silicate	0.00	Magnesium silicate	-91.90
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	3.26	Siderite (FeCO3)	0.0321
Halite (NaCl)	0.136	Halite (NaCl)	-89090
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-77894
Iron sulfide (FeS)	12.04	Iron sulfide (FeS)	4.21

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	1.52	Calcium	5287	5106
Ryznar	3.50	Barium	0.592	0.592
Puckorius	0.970	Carbonate	7.44	0.0690
Larson-Skold Index	308.21	Phosphate	0.00	0.00
Stiff Davis Index	1.56	Sulfate	1047	154.52
Oddo-Tomson	0.447			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

UNICHEM - Midland Analytical Laboratory
P.O. Box 61427, Midland, Texas 79711

DownHole SAT(tm)

MIXED WATER DEPOSITION POTENTIAL INDICATORS

1) Leamex (20%) Btry 8

2) Potash Eddy (80%)

Report Date: 01-31-2001

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite (CaCO3)	0.915	Calcite (CaCO3)	-0.00630
Aragonite (CaCO3)	0.775	Aragonite (CaCO3)	-0.0197
Witherite (BaCO3)	< 0.001	Witherite (BaCO3)	-19.37
Strontianite (SrCO3)	0.0373	Strontianite (SrCO3)	-2.30
Magnesite (MgCO3)	1.03	Magnesite (MgCO3)	0.00183
Anhydrite (CaSO4)	0.108	Anhydrite (CaSO4)	-422.47
Gypsum (CaSO4*2H2O)	0.126	Gypsum (CaSO4*2H2O)	-392.64
Barite (BaSO4)	0.169	Barite (BaSO4)	-0.430
Celestite (SrSO4)	0.0365	Celestite (SrSO4)	-188.93
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-383.07
Fluorite (CaF2)	0.00	Fluorite (CaF2)	-7.71
Silica (SiO2)	0.00	Silica (SiO2)	-51.81
Brucite (Mg(OH)2)	< 0.001	Brucite (Mg(OH)2)	-0.330
Magnesium silicate	0.00	Magnesium silicate	-116.76
Iron hydroxide (Fe(OH)3)	< 0.001	Iron hydroxide (Fe(OH)3)	< 0.001
Strengite (FePO4*2H2O)	0.00	Strengite (FePO4*2H2O)	>-0.001
Siderite (FeCO3)	2.18	Siderite (FeCO3)	0.0415
Halite (NaCl)	0.00516	Halite (NaCl)	-177366
Thenardite (Na2SO4)	< 0.001	Thenardite (Na2SO4)	-67129
Iron sulfide (FeS)	2.45	Iron sulfide (FeS)	0.986

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	0.215	Calcium	1383	1348
Ryznar	6.25	Barium	0.148	0.148
Puckorius	4.65	Carbonate	1.89	0.117
Larson-Skold Index	230.23	Phosphate	0.00	0.00
Stiff Davis Index	0.286	Sulfate	289.60	136.46
Oddo-Tomson	0.505			

OPERATING CONDITIONS

Temperature (°F)	100.00
Time(secs)	1.00

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P.O. Box 61427, Midland, Texas 79711

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

VIII. GEOLOGICAL DATA

The injection zone is located within the Grayburg and San Andres formations which are Permian (Guadalupian) in age. The rocks were deposited in a cyclic carbonate environment that shoaled upward through the sequence. The San Andres formation is primarily dolomite with the best pays developed in wackestones and grainstones where the porosity is enhanced by dissolution. The Grayburg consists primarily of tight dolomitized mudstones and interbedded dolomitic sandstones. The more porous of the sandstones are the pay. The Grayburg sands represent highstand reworking of eolian sands into a shallow marine environment. The thickness of the injection interval ranges from 470 feet to 500 feet in the 6 proposed injection wells. The depth of the injection interval is approximately 4180 feet to 4750 feet from the surface.

The Ogalala formation is a fresh water bearing zone at this location. The base of the Ogalala is at a depth of 200 feet from the surface.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

IX. PROPOSED STIMULATION PROGRAM

The injection wells will be acidized in the Grayburg San Andres formations with approximately 4000 to 10000 gal 15% NEFE HCL depending on the net pay encountered.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

X. APPROPRIATE LOGGING AND TEST DATA

Not applicable. The injection wells have not yet been drilled. The appropriate logs and test data will be filed in accordance with NMOCD regulations after the wells are drilled.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

XI. FRESH WATER ANALYSIS

Chemical analyses of fresh water from the following fresh water wells located within 1 mile of any proposed injection well are attached:

Well	Location	Date of Sample
Potash Eddy #7	Unit M, Sec. 13, T-17-S, R-33-E	01/23/2001
Potash Eddy #4	Unit O, Sec. 13, T-17-S, R-33-E	04/25/2001

Analytical Laboratory Report for:

Phillips

UNICHEM
A Division of BJ Services Company

UNICHEM Representative: John Offutt

Production Water Analysis

Listed below please find water analysis report from: Potash Eddy, 7

Lab Test No:	2001103247	Sample Date:	01/23/2001
Specific Gravity:	1.002		
TDS:	630		
pH:	7.21		
Resistivity:	.021 @ 70 Deg/F	ohms/M	

Cations:	mg/L	as:
Calcium	82	(Ca^{++})
Magnesium	21	(Mg^{++})
Sodium	246	(Na^{+})
Iron	0.00	(Fe^{++})
Barium	0.00	(Ba^{++})
Strontium	1.06	(Sr^{++})
Manganese	0.00	(Mn^{++})
Anions:	**mg/L**	**as:**
Bicarbonate	73	(HCO_3^{-})
Sulfate	37	($SO_4^{=}$)
Chloride	70	(Cl^{-})
Gases:		
Carbon Dioxide		(CO_2)
Hydrogen Sulfide		(H_2S)

Comments:

Analytical Laboratory Report for:

Phillips

UNICHEM
A Division of BJ Services Company

UNICHEM Representative: John Offutt

Partial Water Analysis

Listed below please find water analysis report from: Eddy Potash, #4

Lab Test No: 2001115622 Sample Date: 04/25/2001

pH: 6.71

Cations:	mg/L	as:
Calcium	44.20	(Ca^{++})
Magnesium	11.60	(Mg^{++})
Sodium	26	(Na^{+})
Iron	0.00	(Fe^{++})
Barium	0.07	(Ba^{++})
Strontium	0.70	(Sr^{++})
Manganese	0.00	(Mn^{++})
Anions:	**mg/L**	**as:**
Bicarbonate	207	(HCO_3^{-})
Sulfate	20	(SO_4^{-})
Chloride	53	(Cl^{-})
Gases:		
Carbon Dioxide		(CO_2)
Hydrogen Sulfide		(H_2S)

Comments:
:Laboratory Measured pH :Laboratory Measured Bicarbonate

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

XII. STATEMENT OF HYDROLOGIC INTEGRITY

Phillips Petroleum Company has examined available geological and engineering data and finds no evidence of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
MALJAMAR GRAYBURG SAN ANDRES

XIII. PROOF OF NOTICE

The State of New Mexico is the surface owner and Phillips Petroleum is the only leasehold operator within one-half mile of the proposed injection wells.

Legal notice was published in the Hobbs Daily News-Sun. An Affidavit of Publication is attached.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a 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

April 20 2001

and ending with the issue dated

April 20 2001

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 20th day of

April 2001

Jodi Henson

Notary Public.

My Commission expires
October 18, 2004
(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
April 20, 2001

PHILLIPS PETROLEUM COMPANY, 4001 Penbrook Street, Odessa, Texas 79762, has filed NMOCD Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division, seeking administrative approval for water injection. The wells Leamex wells #58W, #59W, #60W, #61W, #62W, #63W, are located in Township 17 South, Range 33 East, Lea County, New Mexico. The surface locations are as follows:

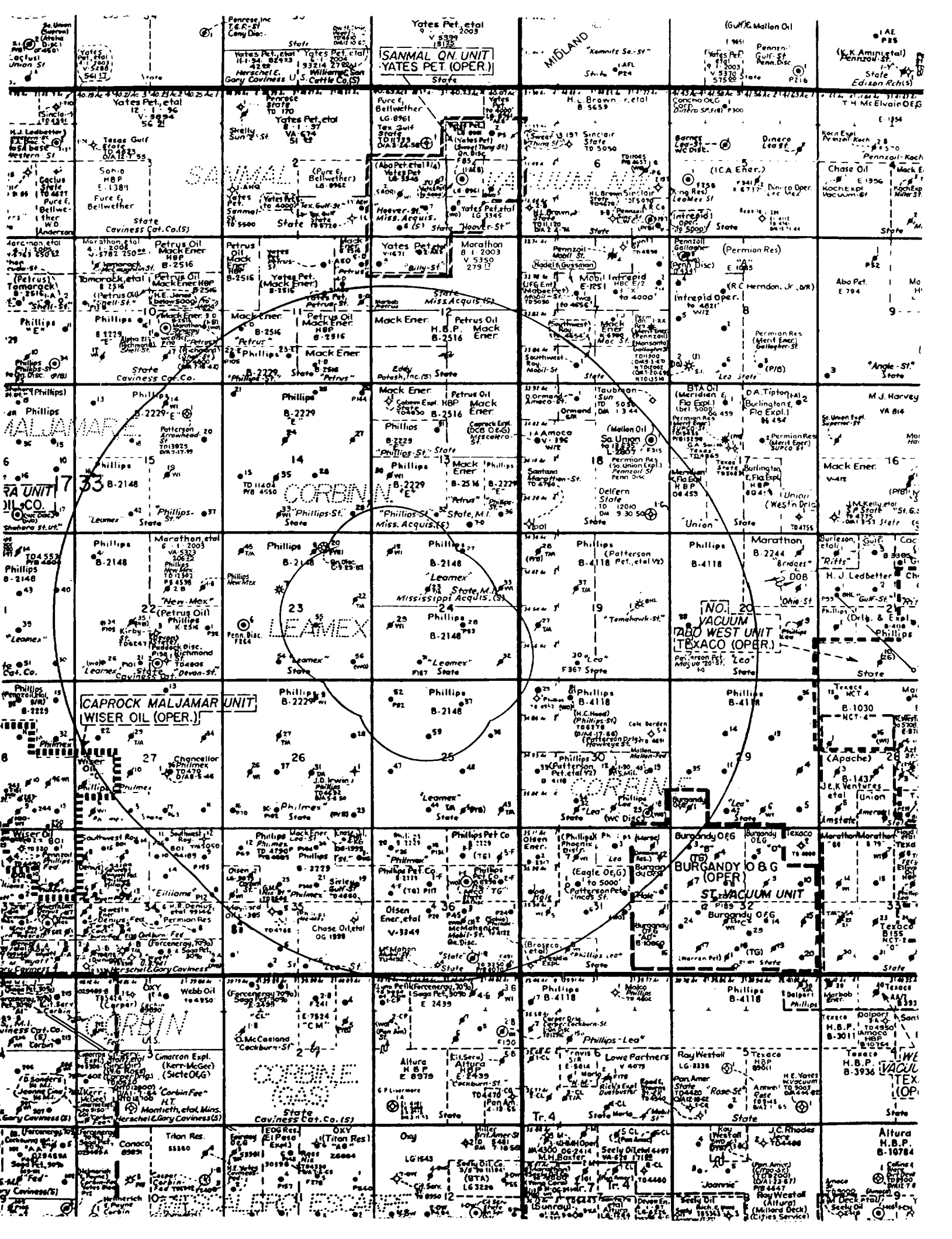
Well #	Location
58W	S.24, 660' FSL & 2130'FEL
59W	S.24, 760' FSL & 700' FWL
60W	S.24, 1980' FSL & 1980'FWL
61W	S.25, 660' FNL & 1940' FWL
62W	S.23, 1980' FSL & 660' FEL
63W	S.24, 1980' FNL & 660' FWL

Injection water will be produced from the area wells producing from the Grayburg/San Andres formation. The produced water will be injected into the Grayburg/San Andres formation at a depth of 4180' - 4750', a maximum surface pressure of 2140 psi, and a maximum rate of 1440 BWPD.

All interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, New Mexico 87504, within 15 days. Additional information can be obtained by contacting L.M. Sanders, Supervisor, Regulation/Proration, at 4001 Penbrook Street, Odessa, Texas 79762, or (915) 368-1488.
#18118

01102332000 02546564

Phillips Petroleum Company/ODE
4001 Penbrook
ODESSA, TX 79762


SANMAL QN. UNIT
YATES PET. (OPER.)
CAPROCK MALJAMAR UNIT
(WISER OIL (OPER.)
CORBIN
LEAMEX
NO. 20 VACUUM ABO WEST UNIT TEXACO (OPER.)
BURGANDY O & G (OPER) ST. VACUUM UNIT
MIDLAND

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3485
Order No. R-3154

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR A WATERFLOOD PROJECT,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 8 a.m. on November 16, 1966, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 28th day of November, 1966, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Phillips Petroleum Company, seeks permission to institute a waterflood project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through three injection wells in Sections 8 and 9, Township 17 South, Range 33 East, NMPM, Lea County, New Mexico.

(3) That the applicant further seeks an administrative procedure whereby said project could be expanded to include additional lands and injection wells in the area of the said project as may be necessary in order to complete an efficient injection pattern; that said administrative procedure should provide for administrative approval for conversion to water injection in exception to the well response requirements of Rule 701 E-5 of the Commission Rules and Regulations.

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to institute a waterflood project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through the following-described wells in Township 17 South, Range 33 East, NMPM, Lea County, New Mexico:

Phillips Petroleum Co., Phillips State E Well No. 2, located in Unit J of Section 8

Phillips Petroleum Co., Phillips State D Well No. 3, located in Unit N of Section 9

Phillips Petroleum Co., Phillips State D Well No. 4, located in Unit K of Section 9

(2) That the subject waterflood project is hereby designated the Northeast Maljamar Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the Northeast Maljamar Waterflood Project to include such additional lands and injection wells in the area of said project as may be necessary to complete an efficient water injection pattern; that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

Q Would you state briefly what Phillips proposes in this application?

A Phillips requests that we be permitted to convert three wells to water injection, in order to waterflood our Phillips State D and Phillips State E leases.

Q Now, is that area unitized?

A Not the immediate area that we are talking about, there are units in the general area, but these two leases will not be unitized.

MR. KELLAHIN: Would you mark these, please?

MR. NUTTER: They have not been marked?

(Whereupon, Applicant's Exhibits 1 through 8 marked for identification.)

Q (By Mr. Kellahin) Mr. Fredericks, referring to what has been marked as Exhibit Number 1, would you identify that exhibit please?

A It is a plat of the area showing three wells, those that we request to be converted to water injection in red.

Q Is the area involved in this waterflood project offset by waterfloods?

A Yes, it is. The leases to the south and to the west are under flood now.

Q Now, there is another case on the docket today, Application of Shenandoah Oil Corporation, is it in any way

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility or the date of filing of Form C-104 and Form C-110 and the plat described above, whichever date is the later.

VII. REPORTING OF PRODUCTION.

RULE 13. The monthly gas production from each gas well shall be metered separately and the gas production therefrom shall be submitted to the Commission so as to reach the Commission on or before the twentieth day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced. The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

VIII. DEFINITIONS.

RULE 14. A gas well shall mean a well producing gas or natural gas from a common source of gas supply from a gas pool determined by the Commission.

(The above Rule supersedes Statewide Definition A-24)

RULE 15. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

DONE at Santa Fe, New Mexico on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

E. S. WALKER, Member

R. R. SPURRIER, Secretary

SEAL

WFX-775

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:
MC_____
DHC_____
NSL_____
NSP_____
SWD_____
WFX X
PMX_____

Leamex	#58-O, 24-17s-33e
Leamex	#59-M, 24-17s-33e
Leamex	#60-K, 24-17s-33e
Leamex	#61-C, 25-17s-33e
Leamex	#62-I, 23-17s-33e
Leamex	#63-E, 24-17s-33e

Gentlemen:

I have examined the application for the:

Phillips Petroleum Co
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

Appears to be complete OK - Cw/ Probably run step rate test on Wells to make sure 2000 psi not over fracture point

Yours very truly,

Chris Williams

Chris Williams
Supervisor, District 1

WFX-775

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:
MC_____
DHC_____
NSL_____
NSP_____
SWD_____
WFX X
PMX_____

Leamex	#58-O,	24-17s-33e
Leamex	#59-M,	24-17s-33e
Leamex	#60-K,	24-17s-33e
Leamex	#61-C,	25-17s-33e
Leamex	#62-I,	23-17s-33e
Leamex	#63-E,	24-17s-33e

Gentlemen:

I have examined the application for the:

Phillips Petroleum Co
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

Appears to be complete OK - CW

Yours very truly,

Chris Williams

Chris Williams
Supervisor, District 1