PMX 3/10/98

194

SOUTHWEST ROYALTIES, INC.
Southwest Royalties Building
407 N. Big Spring, Midland, TX. 79701-4326
P.O. Box 11390, Midland, TX. 79702-8390
(915) 686-9927, 1-800-433-7945

SOUTHWEST ROYALTIES

February 17, 1998

State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Attention: David Catanach

Re: Flying M (SA) Unit
Notification of
C-108 Application,
Lea County, New Mexico

Dear Mr. Catanach:

Please find enclosed Form C-108, Application for Authorization to Inject, on the Flying M (SA) Unit: Tract 6 Well No. 1, Tract 17 Well 1, Tract 25 Well No. 4, Tract 26 Well No. 1, Tract 27 Well No. 1. This application is to serve as notice that we have applied to the Oil Conservation Division for authorization to inject produced water into the above mentioned wells.

Regarding the proposal, all wells within a one-half mile radius of each proposed conversion are within the unit boundaries, and thus are operated by Southwest Royalties, Inc. The State of New Mexico is the owner of the surface of Tract 6 and Tract 17 on which this project is located. Dr. Annette Martin is surface owner of Tract 25, 26 and 27 on which this project is located. Offset operators are RW Oil Company and SDX.

Southwest Royalities, Inc., is requesting administrative approval of this application per requirements set forth in Original Order R-3033 and expansion Order No. 3229.

If additional information is needed, please advise.

Sincerely,

Nelson Patton
Area Supervisor

RECEIVED
FEB 23 1998
CONSERVATION DIVISION

Enclosures

cc: CERTIFIED MAIL
OCD - Hobbs
New Mexico Commissioner of Public Lands
Dr. Annette Martin
SDX
RW Oil Company

		PKR	
6-1	4484-4550	4390	8/4
17-1	4476-4515	4390	9/3
27-1	4498-4530	4400	7/2
26-1	4492-4521	4395	8/c
25-4	4476-4522	4380	6/3

TA/P

9-3

4-4 - TA

~~25-4~~

APPLICATION FOR AUTHORIZATION TO INJECT
FLYING M (SA) UNIT #6-1

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. OPERATOR: South West Royalties, Inc.

ADDRESS: P.O. Drawer 11390 Midland, Tx 79702

CONTACT PARTY: Nelson Patton PHONE: 1-800-433-7945

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: ✓ Yes ___ No
If yes, give the Division order number authorizing the project CS 3555 ✓ R-3229 & R-3033

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Nelson Patton TITLE: Area Supervisor

SIGNATURE: Nelson Patton DATE: 2-17-98

* 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 circumstance 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 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, PO Box 2088, Santa Fe, NM 87504-2088 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.

III.

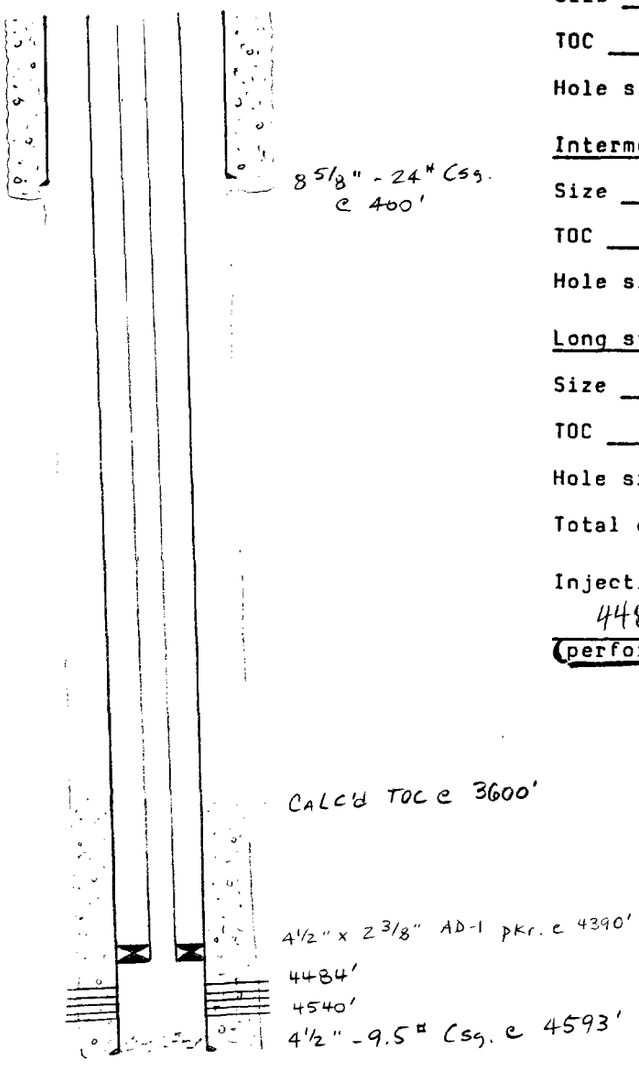
WELL DATA SHEET

FLYING M (SA) UNIT #6-1

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
South West Royalties, Inc.	Flying "M" (SA) Unit			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
Tract 6 - #1	2121' FNL & 1839' FWL	16	T-9-S	R-33-E

Schematic



Tabular Data

Surface Casing

Size 8 5/8" Cemented with 200 sx.

TOC Surface feet determined by Visual

Hole size 11"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4 1/2" Cemented with 200 sx.

TOC 3600' feet determined by Calculation

Hole size 7 7/8"

Total depth 4593'

Injection interval

4484' feet to 4540 feet

(perforated or open-hole, indicate which)

Tubing size 2 3/8" 4.7# lined with Internal Plastic coating (material) set in a

Baker Model AD-1 (Tension) (brand and model) packer at 4390' feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Flying M (SA)

3. Is this a new well drilled for injection? ☐ Yes ☒ No

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

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

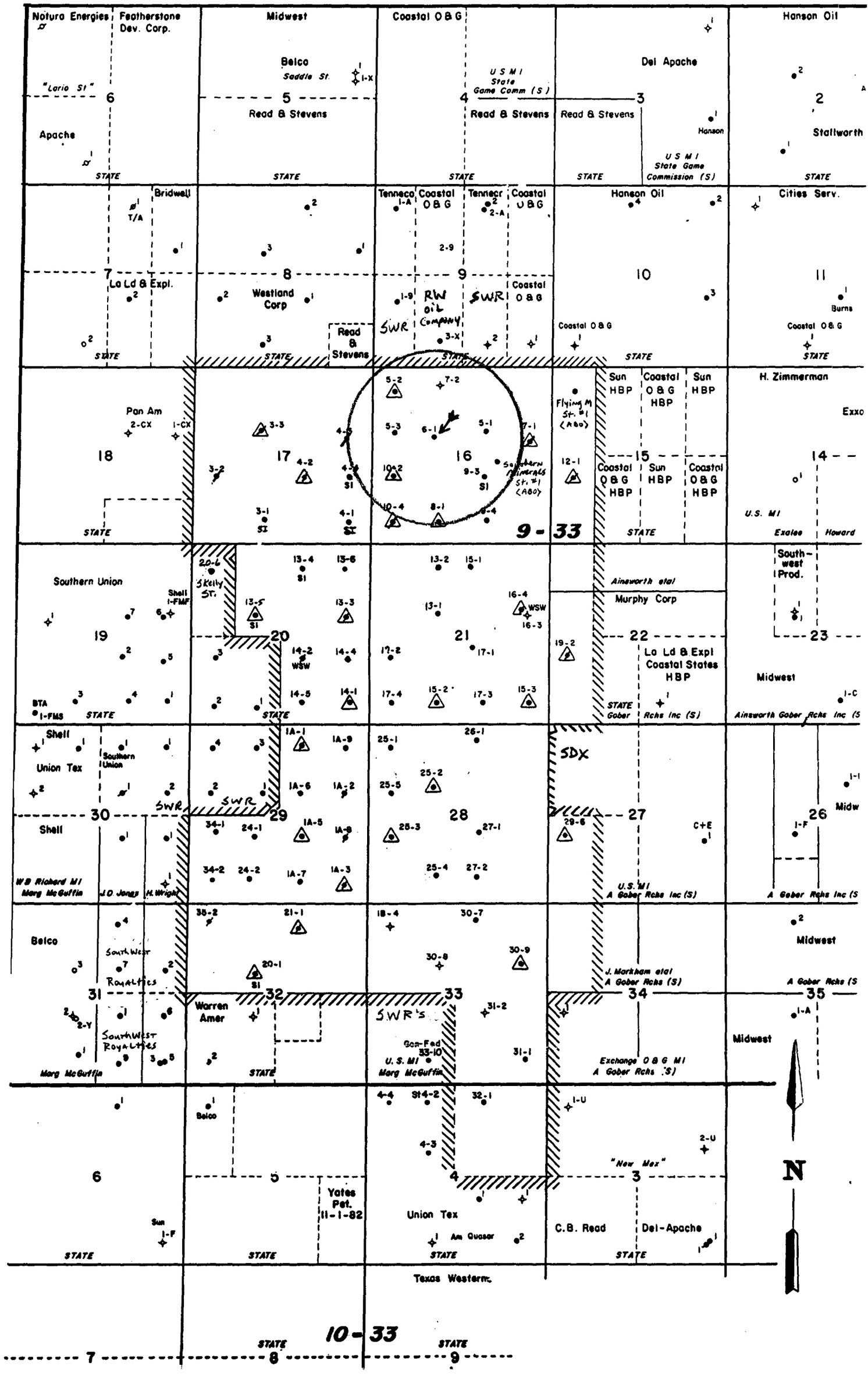
   No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. All wells within the Flying M Unit are San Andres producers or injectors. The ABO formation @ a depth of 8600' is productive in the area.

V.

MAP AREA OF REVIEW

FLYING M (SA) UNIT #6-1


Notura Energies
Featherstone Dev. Corp.
Midwest
Coastal O & G
Hanson Oil
"Lario St"
Belco
Saddle St.
U S M I State Game Comm (S)
Del Apache
Apache
Read & Stevens
Hanson
Stallworth
STATE
Bridwell
T/A
Tenneco
Coastal O & G
Cities Serv.
La Ld & Expl.
Westland Corp
RW Oil Company
SWR
Burns
Read & Stevens
Pan Am
Sun HBP
Flying M St. #1 (A60)
H. Zimmerman
Exxo
Southern Minerals St. #1 (A60)
9 - 33
Southern Union
Shell I-FMS
Kelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
Lo Ld & Expl
Coastal States HBP
Midwest
BTA I-FMS
Gober Rchs Inc (S)
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
SDX
Midw
WB Richard MI
Marg McGuffin
J.D. Jones
H. Wright
U.S. MI
A Gober Rchs Inc (S)
Belco
South West Royalties
J. Markham etal
A Gober Rchs (S)
Midwest
Warren Amer
SWR's
Gas-Fed 33-10
U.S. MI
Marg McGuffin
Exchange O & G MI
A Gober Rchs (S)
Midwest
Belco
"New Mex"
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
Sun I-F
Texas Western
10 - 33

VI.
TABULATION OF DATA
FLYING M (SA) UNIT #6-1

WELLS IN AREA OF REVIEW
APPLICATION FOR AUTHORIZATION TO INJECT
SOUTHWEST ROYALTIES, INC.

Flying "M" (SA) Unit
Tract 5-#1
Location: 1998' FEL & 1978' FNL
Sec. 16, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 3/64
Total Depth: 4531'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	373'	130
	4 ½"	4531'	300

Completion:

4/64) Perf'd 4499' – 4530' acidized with 1000 gals. Of BDA.
7/68) acidized w/ 2500 gals. Of 28% acid + 2500 gals. Of 3% HCL acid...put on pump.

SOUTHERN MINERALS STATE #1
Location: 2308' FSL & 1662' FEL
Sec. 16, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/63
Total Depth: 9548'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	13 3/8"	355'	350
	8 5/8"	3804'	500
	5 ½"	9546'	300

Completion:

7/63) Perf'd 8603' – 16' acidized with 500 gals. MCA + 6000 gals. M-38 acid...put on pump.

FLYING "M" (SA) UNIT
TRACT 9-#3
Location: 1993' FEL & 1978' FSL
Sec. 16, T-9-S, R-33-E

Type: T.A.'ed (Oil)
Date Drilled: 4/65
Total Depth: 4600'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	271'	200
	4 ½"	4600'	227

Completion:

5/65) Perf'd 4478' – 4510' ...acidized with 1000 gals. BDA.
6/68) Acidized with 2500 gals. 28% HCL + 2500 gals. 3% HCL.
3/94) Set CIBP @ 4431' and tested casing.

FLYING "M" (SA) UNIT Type: WIW
TRACT 8-#1 Date Drilled: 4/64
Location: 1996' FWL & 659' FSL Total Depth: 4535'
Sec. 16, T-9-S, R-33-E

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	371'	225
	4 ½"	4533'	300

Completion:

5/64) Perf'd 4491' – 4519' and acidized with 1000 gals.
5/66) Perf'd 4451' – 4481' ... acidized with 500 gals. BDA
8/68) Converted to WIW.

FLYING "M" (SA) UNIT Type: WIW
TRACT 5-#2 Date Drilled: 7/64
Location: 659' FNL & 663' FWL Total Depth: 4569'
Sec. 16, T-9-S, R-33-E

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	262'	200
	4 ½"	4569'	300

Completion:

8/64) Perf'd 4490' – 4501' and acidized with 1000 gals. BDA.
4/67) Perf'd 4513' – 4529' acidized with 2000 gals. 28% HCL and converted to WI.

FLYING "M" (SA) UNIT Type: Producer (Oil) T.A. 'ed
TRACT 4-#4 Date Drilled: 5/65
Location: 1980' FSL & 660' FEL Total Depth: 9285'
Sec. 17, T-9-S, R-33-E

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	11 ¾"	411'	350
	8 5/8"	3751'	400
	4 ½"	Top @ 3659'	0
		Bottom @ 4487'	

Completion:

Well spudded 5/65 and plugged in 7/65. Coastal Oil & Gas Re-entered well 3/67 and ran 4 ½" liner from 3659' to 4487'. The liner was perf'd from 4432' – 4482' and acidized with 2000 gals. Of 28% HCL acid. The well was re-acidized in 3/67 with 3500 gals. 28% acid and rock salt. 5/94) A CIBP was set at 3567' and the casing was tested at 500#. The well remains in T.A.'ed status at this time.

FLYING "M" (SA) UNIT
TRACT 5-#3
Location: 1977' FNL & 663' FWL
Sec. 16, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 11/64
Total Depth: 4560'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	263'	200
	4 ½"	4560'	300

Completion:

12/64) Perf'd 4486' – 92' ... acidized with 1000 gals.
12/64) Perf'd 4468' – 74' acidized with 1000 gals.
2/65) Acidized well with 10,000 gals. Of acid
5/68) Perf'd 4486' – 4516' acidized with 3000 gals. Of 28% acid + 3000 gals. 3% acid.
5/68) Acidized with 1500 gals. 28% HCL + 1300 gals. Of 3% HCL acid.

FLYING "M" (SA) UNIT
TRACT 10-#2
Location: 665' FWL & 1977' FSL
Sec. 16, T-9-S, R-33-E

Type: WIW
Date Drilled: 6/64
Total Depth: 4600'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	259'	200
	4 ½"	4600'	300

Completion:

6/64) Perf'd 4476' – 82 and acidized with 1000 gals.
1/69) Perf'd 4454' – 60', 4464' – 68', 4486' – 90' ... acidized with 3000 gals. 15% acid + 3000 gals. Of 3% acid.
2/85) Perf'd 4500' – 4508' ... acidized with 6000 gals. 15 % HCL acid. Converted well to water injection.

LEASE Flying "M" (SA) Unit WELL NO. Tract 4-3 OPERATOR Southwest Royalties, Inc.
TYPE P & A'ed 11/92 DATE DRILLED 11/23/64 ELEV 4376' GR
LOCATION 2116 FT FROM THE North LINE 796 FT FROM THE East LINE
UNIT LETTER H SECTION 17 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4554'

COMPLETION 12/64) Perf 4436'- 4445' treat w/ 250 gals. 15% MCA, 1000 gals. 15%, 300 gals. 15% BDA, 1000 gals. 15%. 3/65) Acidize w/ 2000 gals. 15%.

10 sxs. surface plug

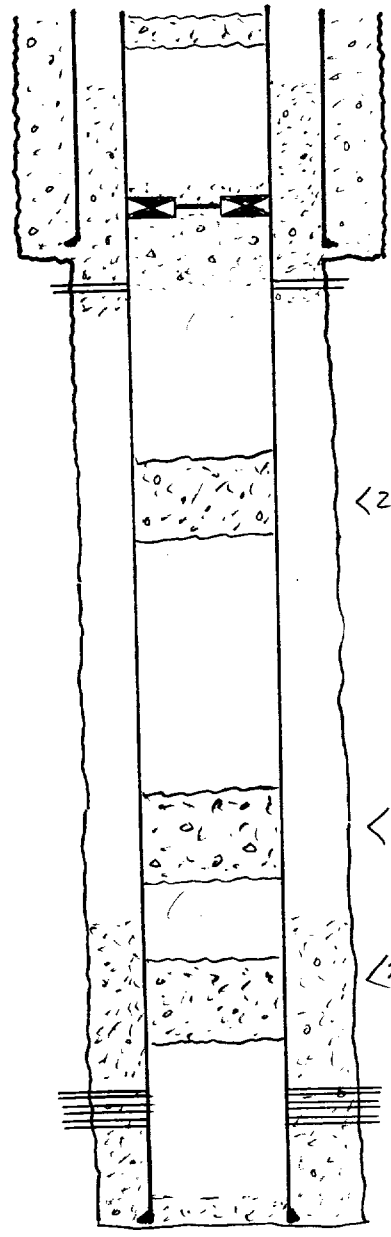
11 " HOLE

8 5/8 " 24 # CASING @ 414'
200 SXS CEMENT Circ'd

CMT Ret @ 360'
pump 50 sxs. Thru Ret.

Squeeze holes @ 440'

7 7/8 " HOLE



<25 sxs. cement Plug #3 1915'- 1626'

<25 sxs. cement Plug #2 3502'- 3213'

<25 sxs. cement ... Plug #1 4130'- 3812'

4436'
4445'

4 1/2 " 9.5 # CASING @ 4554'
200 SXS CEMENT Calc'd TOC @ 3600'

LEASE Flying "M" (SA) Unit WELL NO. TRACT 10-4 OPERATOR Southwest Royalties, Inc.
TYPE WIW (P&A'ed) DATE DRILLED 1/65 ELEV 4384' GR
LOCATION 659 FT FROM THE South LINE 664 FT FROM THE West LINE
UNIT LETTER M SECTION 16 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 9400'

COMPLETION Original TD 9400', completed in Bough "C"
P&A'ed July 1965. Re-entered well July 1966 ... completed in San Andres
4436'-70'. Converted to WI 1/14/73. Well P&A'ed 1/25/85

7/9/66 – 7/14/66
Clean out 8 5/8" Csg to 4534' .. set CIBP @ 4520'
perf Csg 4436-70'
treat w/ 500 gals

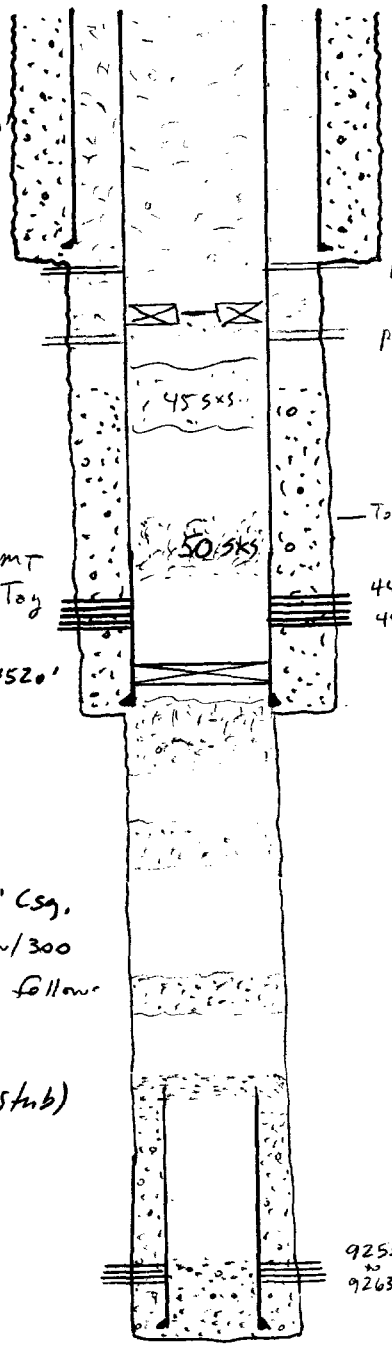
1/13/73 – 1/14/73
Set pkr, @ 4384' start injecting water

1/15/83) Spot 50 sxs, cmt in 8 5/8" csg, ... WOC + Tag @ 4248' ... tested Csg @ 500#
CIBP @ 4520'
Top of plug 4248'
Bottom of plug 4378'

Original TD @ 9400' w/ 5½" Csg, set @ 9400' and cemented w/300 sxs. .... plugged Back As follows

25 sxs. @ 9265'
25 sxs. @ 7861' (5½" Csg. Stub)
25 sxs. @ 6500'
25 sxs. @ 5100'
25 sxs. @ 4700'
BP @ 4333' (in 8 5/8" Csg.)

1/1983
Spot 50 sxs. 4378'-4248'
T... plug ... ST



17½" HOLE

13 3/8" 48 # CASING @ 340'
350 SXS CEMENT circ'd.

11" HOLE

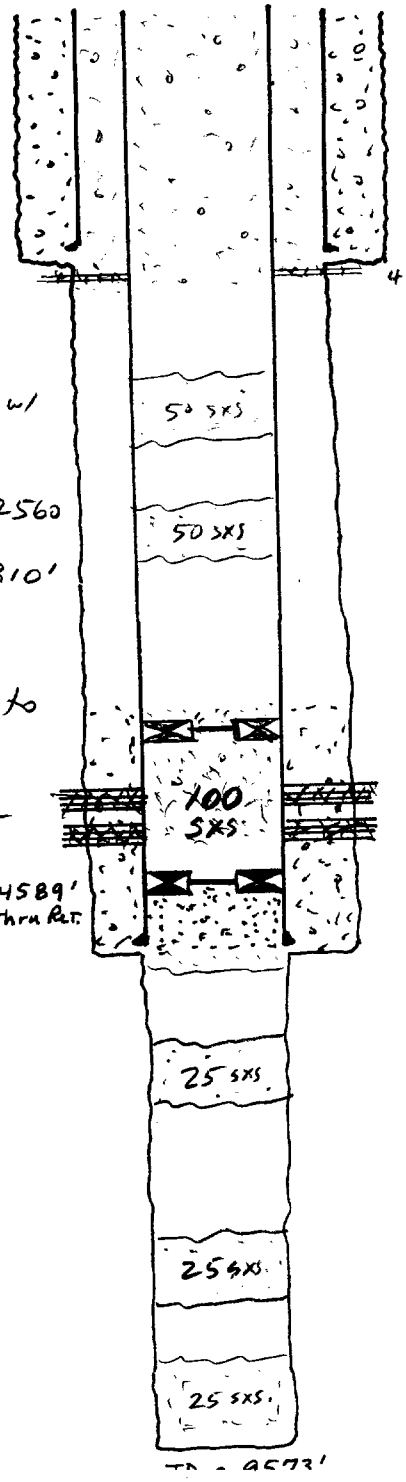
8 5/8" 24 & 32 # CASING @ 4599'
450 SXS CEMENT TOC @ 2260' (calc'd)

1/24/85) Tag Cmt plug @ 4248' circ. hole w/ 9.5 # brine mud POH to 2500' + spot 40 sxs. (145' fill) Perf 8 5/8" Csg. @ 1980' set Cmt Ret @ 1880' Squeeze 75 sxs. Shot squeeze holes @ 390' + pump 300 sxs, thru holes ... circ'd cmt.

15.5 # & 17 #
5½" Csg. @ 9400' (Csg ran 3/11/65)
cmt'd. w/ 300 sxs.
TOC @ 8000'

LEASE Flying "M" (SA) Unit WELL NO. Tract 7-1 OPERATOR South West Royalties, Inc.
TYPE WIW (P+A'CD) DATE DRILLED 11/68 ELEV. 4368'
LOCATION 2200 FT FROM THE North LINE 660 FT FROM THE East LINE
UNIT LETTER H SECTION 16 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 9573'

COMPLETION 11/70) Set Cmt Ret @ 4589'.. tested Csg @ 1000# Good. Stung into Ret + pump 50 sxs. Perf'd 4530'-44 4518-26, 4511-15 4504'-07 Acidize w/ 1500 gals. 28% 2000 gals. 3% acid. Set pKr. @ 4260' + put on injection



C-103 filed
P+A 1/11/85

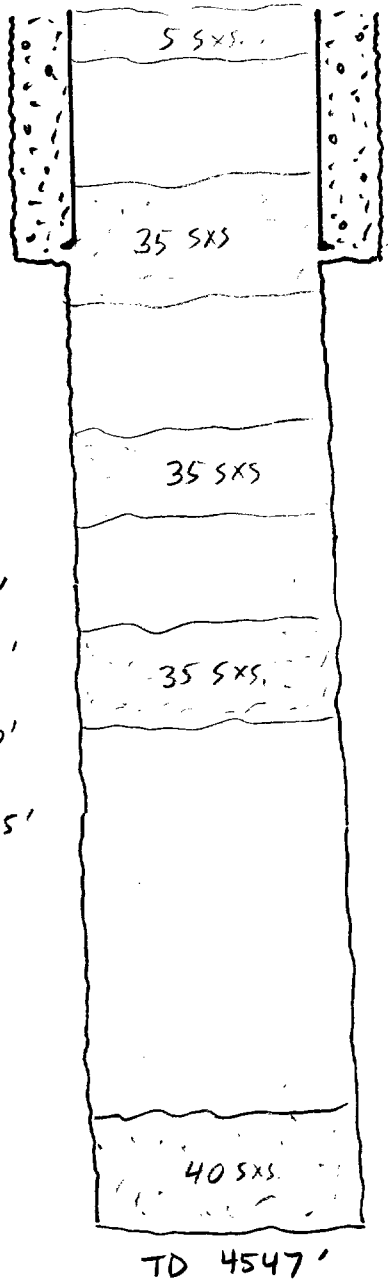
Set Ret. @ 4250' + Squeezed perfs 4504'-44 w/ 100 sxs.
Spot 50 sxs. 2700'-2560
Spot 50 sxs. 1950'-1810'
perf 8 5/8" @ 450'
pump 150 sxs, circ to Surface
P+A complete 11/20/85

OH - P+A

25 sxs. @ 9150'
25 sxs. @ 8650'
25 sxs. @ 5500'
25 sxs. @ 4620'
up into 8 5/8" Csg.

LEASE Flying "M" (SA) Unit WELL NO. Tract 7-2 OPERATOR Southwest Royalties, Inc.
TYPE D & A DATE DRILLED 6/74 ELEV. 4385' GR
LOCATION 554 FT FROM THE North LINE 1988 FT FROM THE West LINE
UNIT LETTER C SECTION 16 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4547'

COMPLETION P & A'ed 6/26/74
Cored 4467-4527 rec. 60' 4527'-47' rec. 20'



12¼" HOLE

8⅝" 24 # CASING @ 382'
300 SXS CEMENT circ'd

7⅞" HOLE

P & A
6/26/74

40 sxs. 4547'-4397'
35 sxs. 2800'-2700'
35 sxs. 1700'-1600'
35 sxs. 425'-325'
5 sxs. surface

Drilled & Abandoned

VII. Proposed Operation

1. We anticipate the average injection rate and pressure to be 300 BWPD @ 800 psi. Anticipated maximum rate and pressure would be 1200 BWPD @ 2100 psi.

2. This is a closed system.

3. The fluid to be injected is predominantly water produced from within the Unit. If additional water volume is needed, fresh water will be utilized from a fresh water well that is located approximately 5 miles South of the Flying "M" Unit. This system has been in use for several years. San Andres water from producing wells outside the Unit is also used for make-up water.

VIII. The recommended injection zone in the subject well occurs in the San Andres Dolomite formation from 4484' – 4540' . This zone is approximately 731' below the top of the San Andres formation which was encountered @ 3753'.

The Lithologic description of the injection zone in the Flying "M" Field consists of a dense to porous dolomite with minor vertical fracturing. The porosity is vugular to intercrystaline. The interval from 4450' – 4520' has been the main producing interval in the Flying "M" Field since it was discovered. Geologically, it is known as the Slaughter producing zone of the San Andres.

The geologic name and depth to underground source of drinking water is the Ogallala formation which occurs from 0' to 400' in this area.

IX. A small volume matrix acid stimulation will be performed on the well. This Stimulation will consist of 2000 – 4000 gals. Of 20% HCL acid.

X. This well was drilled in November of 1964 (prior to unitization) as the State "A" #1 , operated by Redfern Development Corporation. It is assumed that the logs were sent in to the State at that time.

XI. Map and water analysis attached.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SOUTHWEST ROYALTIES
ATTN: NELSON PATTON (JERRY MABREY)
P.O. BOX 11390
MIDLAND, TX 79702-9911
FAX TO:

Receiving Date: 12/01/97
Reporting Date: 12/03/97
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/27/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

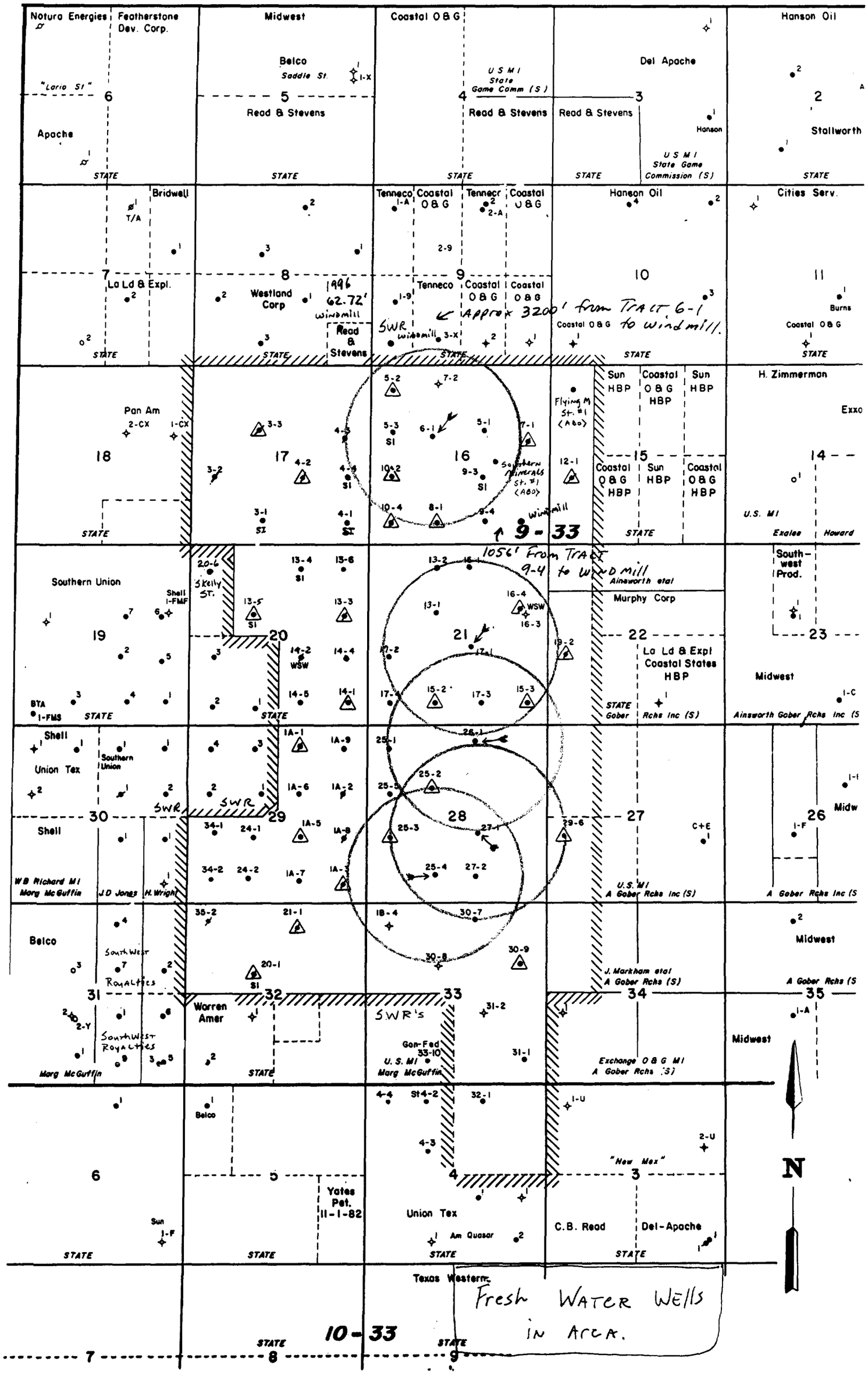
LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/03/97	12/02/97	12/02/97	12/02/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	0	302	90	5.5	2739	136
H3343-2	WATER WELL NW OF 6-1	63	59	29	4.3	929	132
H3343-3	W OF NW WATER WELL	95	38	13	3.9	785	156
Quality Control		NR	NR	NR	NR	1429	NR
True Value QC		NR	NR	NR	NR	1413	NR
% Accuracy		NR	NR	NR	NR	101	NR
Relative Percent Difference		NR	NR	NR	NR	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl⁻ (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/01/97	12/02/97	12/01/97	12/01/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	64	850	0	166	7.16	2399
H3343-2	WATER WELL NW OF 6-1	64	180	0	161	7.27	620
H3343-3	W OF NW WATER WELL	40	142	0	190	7.00	482
Quality Control		500	101	NR	NR	6.99	NR
True Value QC		500	100	NR	NR	7.00	NR
% Accuracy		100	101	NR	NR	100	NR
Relative Percent Difference		4.0	1.0	NR	NR	0.1	0.3
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

Date 12/03/97

H3343.XLS


Notura Energies
Featherstone Dev. Corp.
Midwest
Coastal O&G
Hanson Oil
Belco
Saddle St.
1-X
"Lario St"
Apache
Read & Stevens
USMI State Game Comm (S)
Del Apache
Hanson
Stallworth
STATE
Bridwell
T/A
Tenneco
Coastal O&G
Hanson Oil
Cities Serv.
La Ld & Expl.
Westland Corp
1996
62.72'
windmill
Read & Stevens
SWR
Approx 3200' from TRACT 6-1 to windmill.
Burns
Pan Am
2-CX
1-CX
Flying M St. #1 (ABO)
Sun HBP
Coastal O&G HBP
H. Zimmerman
Exxo
Southern Minerals St. #1 (ABO)
9-33
1056' From TRACT 9-4 to WINDMILL
U.S. MI
Eunice
Howard
Southern Union
Skelly St.
Shell 1-FMS
Murphy Corp
Ainsworth etal
Southwest Prod.
La Ld & Expl
Coastal States HBP
Midwest
BTA 1-FMS
Gober Rchs Inc (S)
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
SWR
SWR
Midw
WB Richard MI
Morg McGuffin
J.D Jones
H. Wright
U.S. MI
A Gober Rchs Inc (S)
Belco
SouthWest Royalties
J. Markham etal
A Gober Rchs (S)
Midwest
Warren Amer
SWR's
Gen-Fed 33-10
U.S. MI
Morg McGuffin
Exchange O&G MI
A Gober Rchs (S)
Midwest
Belco
"New Mex"
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
Sun
1-F
Texas Western
Fresh WATER WELLS IN AREA.
10-33
STATE
N

APPLICATION FOR AUTHORIZATION TO INJECT
FLYING M (SA) UNIT #17-1

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL
RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe. NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. OPERATOR: South West Royalty, Inc.

ADDRESS: P.O. Drawer 11390 Midland, Tx 79702

CONTACT PARTY: Nelson Patton PHONE: 800-433-7945

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: ✓ Yes ____ No
If yes, give the Division order number authorizing the project R-3229 & R3033

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Nelson Patton TITLE: Area Supervisor

SIGNATURE: Nelson Patton DATE: 2-17-98

* 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 circumstance 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 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, PO Box 2088, Santa Fe, NM 87504-2088 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.

III.

WELL DATA SHEET

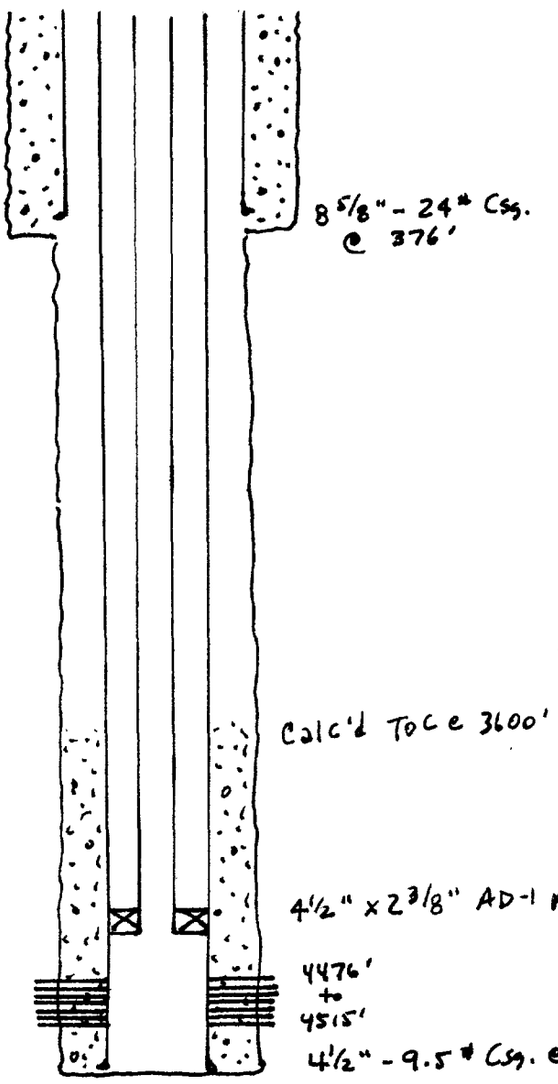
FLYING M (SA) UNIT #17-1

INJECTION WELL DATA SHEET

South West Royalties, Inc. — OPERATOR
Flying "M" (SA) Unit — LEASE

WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
Tract 17-1	2310' FEL & 2307' FSL	21	T-9-S	R-33-E

Schematic



Tabular Data

Surface Casing

Size 8 5/8" Cemented with 225 sx.

TOC Surface feet determined by visual

Hole size 12 1/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4 1/2" Cemented with 300 sx.

TOC 3600' feet determined by Calculation

Hole size 6 3/4"

Total depth 4535'

Injection interval

4476' feet to 4515' feet

(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with Internal plastic coating (material) set in a

Baker Model AD-1 (Tension) (brand and model) packer at 4390 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Flying "M" (SA)

3. Is this a new well drilled for injection? ☐ Yes ☒ No

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

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

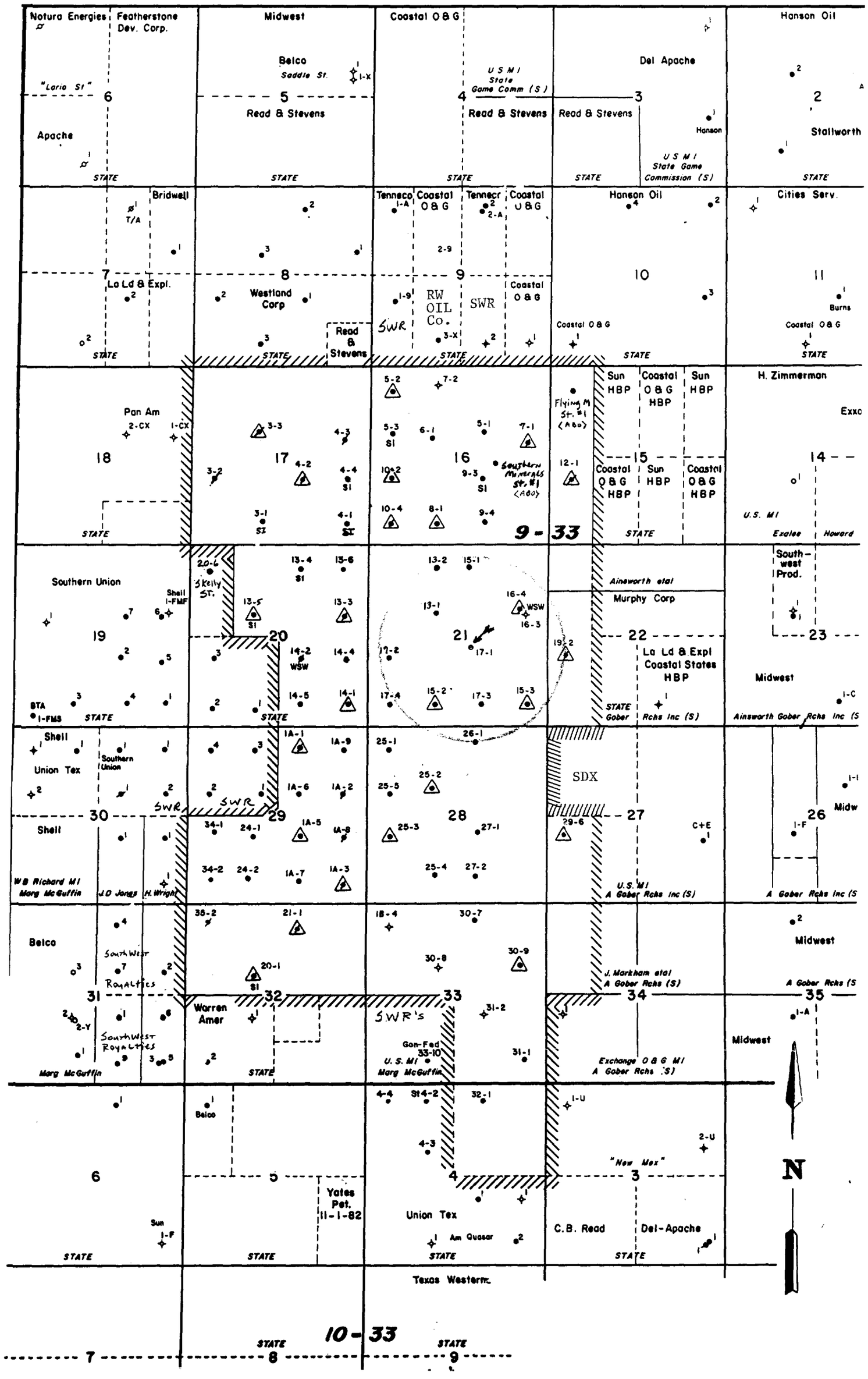
No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

All wells within the Flying M Unit are San Andres producers or injecters. The ABO formation @ a depth of 8600' is productive in the area.

V.

MAP AREA OF REVIEW
FLYING M (SA) UNIT #17-1


Notura Energies
Featherstone Dev. Corp.
"Lario St"
Apache
STATE
Midwest
Belco
Saddle St.
Read & Stevens
Coastal O & G
U S M I State Game Comm (S)
Del Apache
Hanson
U S M I State Game Commission (S)
Hanson Oil
Stallworth
Bridwell
T/A
La Ld & Expl.
Westland Corp
Tenneco
Coastal O & G
RW OIL Co.
SWR
Cities Serv.
Burns
Pan Am
2-CX
1-CX
Flying M St. #1 (A60)
Sun HBP
Coastal O & G HBP
H. Zimmerman
Exxo
Southern Minerals St. #1 (A60)
9 - 33
U.S. MI
Exalee
Howard
Southern Union
Shell 1-FMS
Skelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
BTA 1-FMS
Coastal States HBP
Midwest
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
SDX
Midw
WB Richard MI
Marg McGuffin
J.D Jones
H. Wright
U.S. MI
A Gober Rchs Inc (S)
Belco
SouthWest Royalties
J. Markham etal
Midwest
Warren Amer
SWR's
Gon-Fed 33-10
Exchange O & G MI
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
"New Mex"
N
Texas Western
10 - 33

VI.

TABULATION OF DATA
FLYING M (SA) UNIT #17-1

WELLS IN AREA OF REVIEW
APPLICATION FOR AUTHORIZATION TO INJECT
SOUTHWEST ROYALTIES, INC.

FLYING "M" (SA) UNIT
TRACT 17-#4
Location: 660' FSL & 665' FWL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/74
Total Depth: 4502'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	365'	300
	4 ½"	4502'	250

Completion:

7/64) Perf'd 4435' – 4475' acidized with 1500 gals. 28% HCL acid, 3000 gals. 15% HCL acid, and 4500 gals. 3% HCL acid.
7/74) Set Cement Retainer @ 4469' and squeezed perfs (4471'-75') with 200 bbls. Injectrol + 50 sxs. Cement.

FLYING "M" (SA) UNIT
TRACT 15-#3
Location: 525' FSL & 797' FEL
Sec. 21, T-9-S, R-33-E

Type: WIW
Date Drilled: 12/66
Total Depth: 4605'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	264'	200
	4 ½"	4604'	250

Completion:

1/67) Perf'd 4516' – 4536' acidized with 1000 gals. BDA.
1/73) Converted to WIW.
4/91) Acidized with 2000 gals. 20% HCL acid.

FLYING "M" (SA) UNIT
TRACT 17-#3
Location: 1985' FEL & 659' FSL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/67
Total Depth: 4580'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	295'	250
	4 ½"	4579'	277

Completion:

6/67) Perf'd 4502' – 4536' acidized with 3000 gals. 28% HCL acid and 3000 gals.of 3% HCL acid...re-acidized with 1500 gals. 28% HCL acid.
12/92) Perf'd 4486' – 4502' , 4528' – 33' acidized with 2750 gals. 15% HCL.

FLYING "M" (SA) UNIT
TRACT 15-#2
Location: 660' FSL & 1985' FWL
Sec. 21, T-9-S, R-33-E

Type: WIW
Date Drilled: 6/64
Total Depth: 4570'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	265'	200
	4 ½"	4570'	300
	3 ½"	Surface to 4360'	320

Completion:

7/64) Perf'd 4497' – 4506' and acidized with 1000 gals. BDA.
10/67) Perf'd 4468' – 4488' acidized with 3000 gals. 28% HCL acid + 3000 gals. Of 3% HCL acid.
2/70) Converted to WIW.
10/97) Ran 3 ½" Liner from surface to 4360' and cemented to surface. Acidized perfs with 2500 gals. 15% HCL acid...resume injection.

FLYING "M" (SA) UNIT
TRACT 15-#1
Location: 659' FNL & 2310' FEL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 7/64
Total Depth: 4575'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	265'	200
	4 ½"	4575'	300

Completion:

7/64) Perf'd 4510' – 4523' acidized with 1000 gals. BDA.
2/69) Perf'd 4476' – 4500' acidized with 2000 gals. 28% HCL, 2000 gals. 15% HCL, and 3000 gals. 3% HCL acid.

FLYING "M" (SA) UNIT
TRACT 13-#2
Location: 659' FNL & 1985' FWL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 5/64
Total Depth: 4525'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	357'	225
	4 ½"	4525'	300

Completion:

5/64) Perf'd 4498' – 4522' acidized with 1000 gals. BDA.
4/67) Perf'd 4470' – 4487' acidized with 3000 gals. 28% HCL acid.

FLYING "M" (SA) UNIT
TRACT 13-#1
Location: 1978' FNL & 1993' FWL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 9/63
Total Depth: 9407'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	13 3/8"	405'	350
	8 5/8"	4009'	400
	5 ½"	9407'	350

Completion:

11/63) Perf'd 9356' – 9374' acidized with 500 gals. Of MCA...put on pump.
12/63) Set CIBP @ 9300' capped with cement.
2/64) Perf'd squeeze holes @ 4490' and pumped 250 sxs. Cement ...TOC @ 4150' as per CBL.
2/64) Perf'd 4502' – 18' and acidized with 1000 gals. BDA.

4/69) Perf'd 4456' – 83' acidized with 500 gals. Of 28% HCL acid.

FLYING "M" (SA) UNIT
TRACT 17-#2
Location: 1979' FSL & 664' FWL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 5/64
Total Depth: 4544'

Casing Report:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	263'	175
	4 ½"	4544'	300

Completion:

6/64) Perf'd 4475' – 94' acidized with 1000 gals. BDA.
3/66) Perf'd 4449' – 4468' acidized with 1000 gals. BDA.

FLYING "M" (SA) UNIT
TRACT 26-#1
Location: 520' FNL & 2120' FEL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 4/66
Total Depth: 4600'

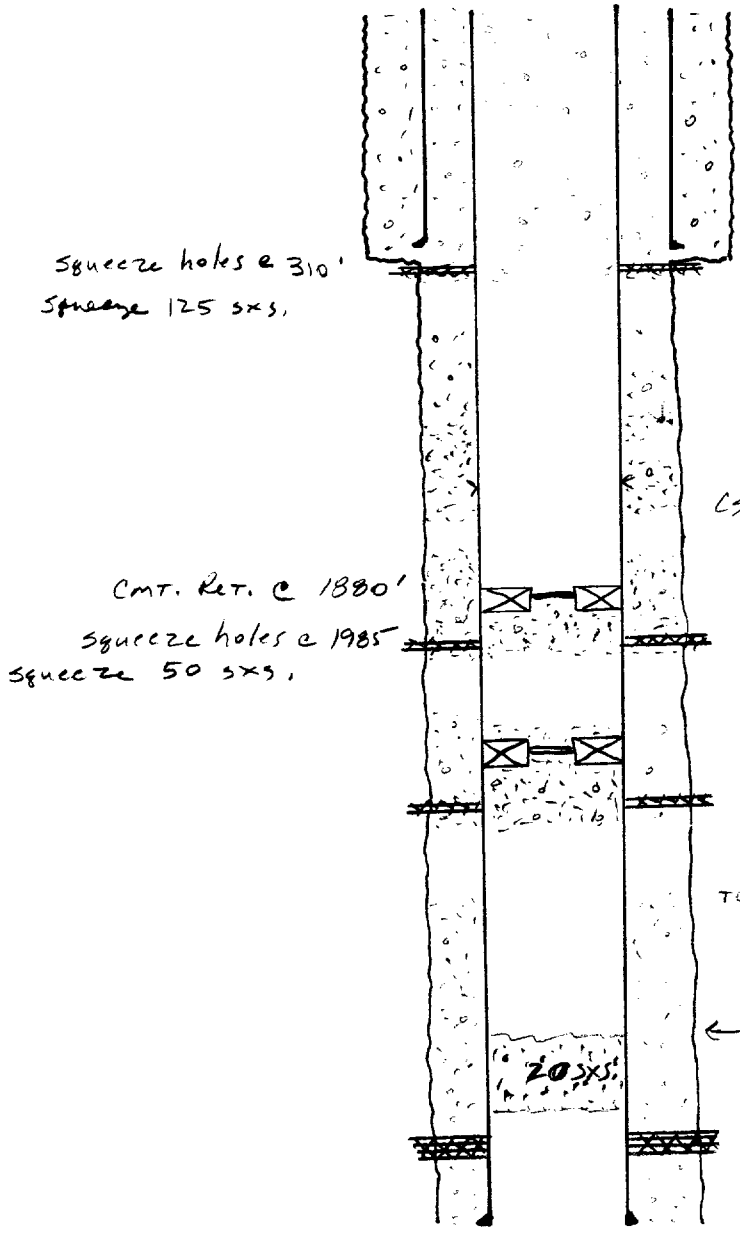
Casing Report:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	328'	200
	4 ½"	4600'	350

Completion:

4/66) Perf'd 4492' – 4521' acidized with 1065 gals. Of 15% NE HCL
3/67) Acidized with 3000 gals. Of Super X acid.
4/96) Acidized with 3000 gals. Of 15% NEFE HCL + salt diverter.

LEASE Flying "M" (SA) Unit WELL NO. Tract 16-4 OPERATOR Southwest Royalties, Inc.
TYPE Prod WIW DATE DRILLED 2/11/66 ELEV 4355'
LOCATION 1904 FT FROM THE North LINE 845.9 FT FROM THE East LINE
UNIT LETTER H SECTION 21 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4630

COMPLETION 2/66) Perf'd 4507'-10, 4513'-16, 4520-24 spot 1000 gals. BDA 1/17/68) Convert to WI 10/84) Csg leak 1751'-1781' sqz. w/ 150 sxs. 11/84) Set Cmt Ret @ 4316' squeeze w/ 2000 gals. Flo-check + 250 sxs. + 2000 gals. Flo-check + 200 sxs. squeezed to 1950# ... drilled out ... getting form. in returns ... RIH to 4416 + spot 20 sxs. "C". 1/29/85) Tag Plug @ 4132'.



12 1/4 " HOLE

8 5/8 " 24 # CASING @ 261'
200 SXS CEMENT circ'd

7 7/8 " HOLE
Csg leak @ 1751'-1781' squeezed w/ 150 sxs.

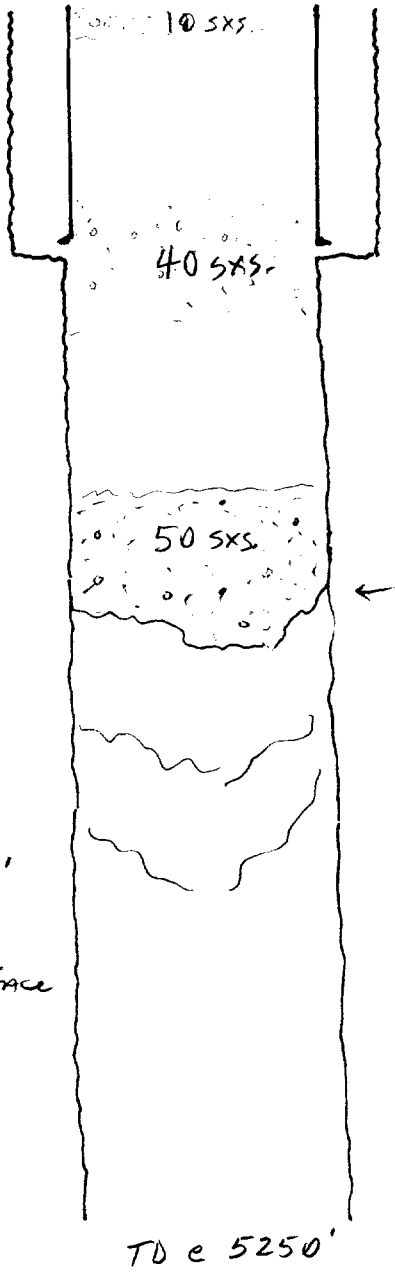
CMT. RET. @ 2480'
4) squeeze holes @ 2582' .. squeeze w/ 50 sxs.

← Tagged @ 4132' (TOC)

4 1/2 " 9.5 # CASING @ 4630'
277 SXS CEMENT calc'd TOC @ 3100'

LEASE Flying "M" (SA) Unit WELL NO. TRACT 16-3 OPERATOR Southwest Royalties, Inc.
TYPE WSW DATE DRILLED 8/64 ELEV 4356'
LOCATION 1980 FT FROM THE North LINE 660 FT FROM THE EAST LINE
UNIT LETTER H SECTION 21 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 5250

COMPLETION 8/24/64 TD'ed @ 5250' fishing drill pipe ... hole caved in ... could not get below 1294'



12 1/4 " HOLE

8 5/8 " 24 # CASING @ 268'
200 SXS CEMENT circ'd

7 7/8" HOLE

← CAVE in @ 1294'

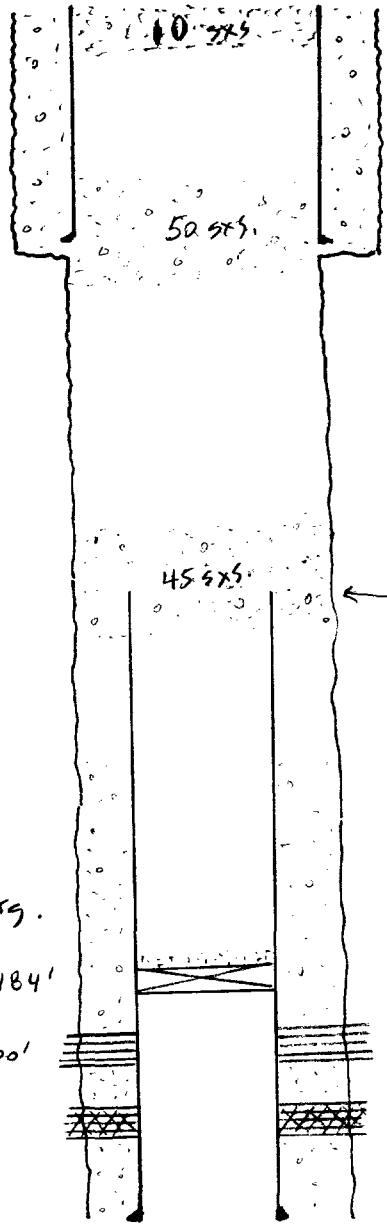
8/26/64 P+A

50 SXS. 1260'-1020'
40 SXS. 375'-234'
10 SXS 30'- surface

TD @ 5250'

LEASE Flying "M" (SA) Unit WELL NO. TRACT 19-2 OPERATOR South West Royalties, Inc.
TYPE P+A'ED WIW DATE DRILLED 8/66 ELEV 4351'
LOCATION 485 FT FROM THE West LINE 1980 FT FROM THE South LINE
UNIT LETTER L SECTION 22 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4680

COMPLETION 1/67) Perf'd 4567'-69, 4574'-76, 4580'-84
Acidize w/ 1500 gals. - Squeezed w/ 50 sxs. cmt 6/67) Perf'd
4603'-20' Acidize w/ 2000 gals. 28% 6/14/67) Convert to WIW.



12 1/4" HOLE

8 5/8" 24 # CASING @ 264'
150 SXS CEMENT Circ'd

7 7/8" HOLE

← 4 1/2" Csg. Cut off @ 1185'

4/5/74 to 4/6/74
P+A Procedure:
Set CIBP @ 4400' w/
3 sxs. cmt on top
Cut & Pull 1185' of Csg.
Spot 45 sxs. cmt @ 1184'
Spot 50 sxs. cmt @ 300'
Spot 10 sxs. surface

4 1/2" 9.5 # CASING @ 4680'
250 SXS CEMENT Calc'd TOC @ 3700'

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SOUTHWEST ROYALTIES
ATTN: NELSON PATTON (JERRY MABREY)
P.O. BOX 11390
MIDLAND, TX 79702-9911
FAX TO:

Receiving Date: 12/01/97
Reporting Date: 12/03/97
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/27/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

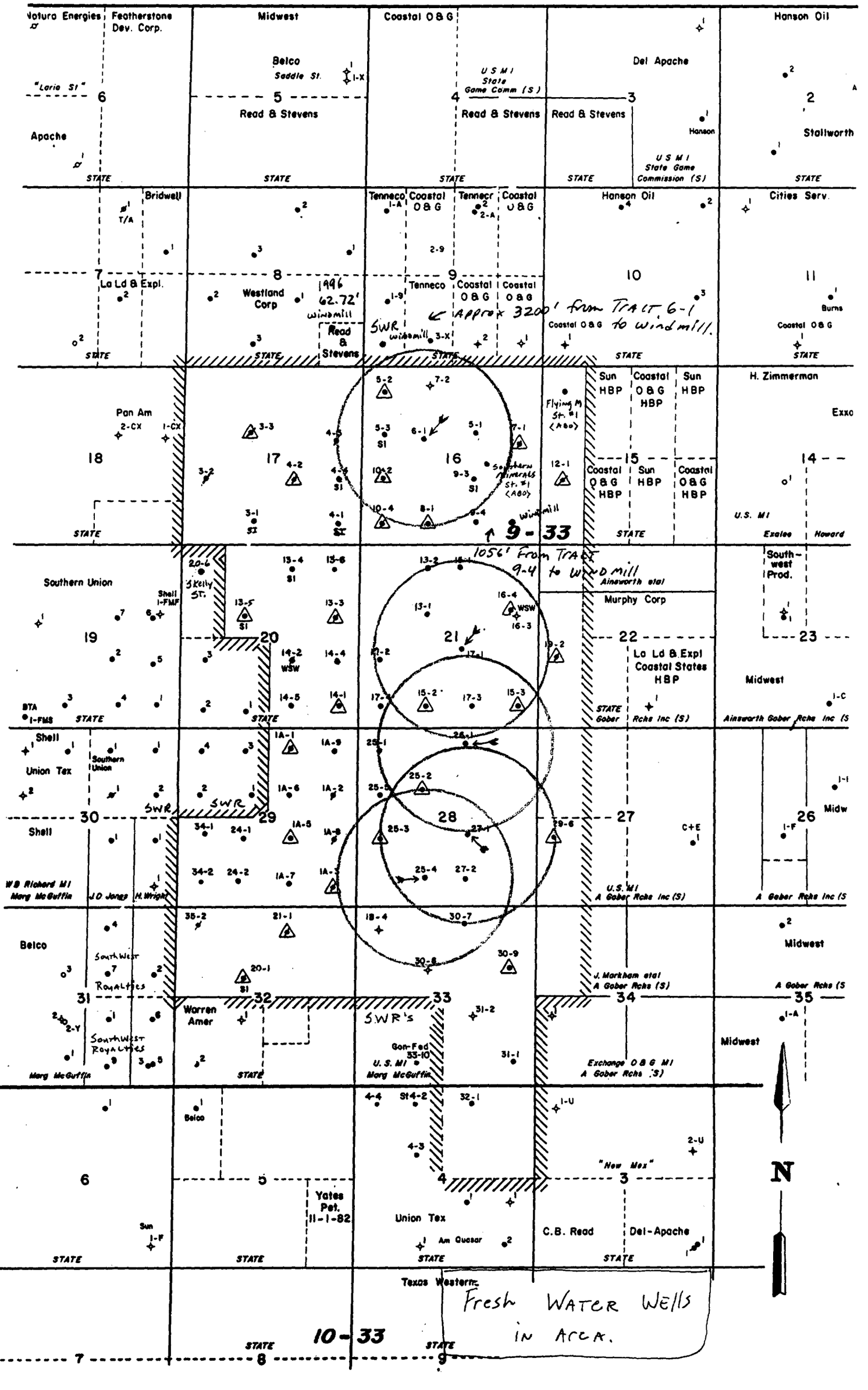
LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/03/97	12/02/97	12/02/97	12/02/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	0	302	90	5.5	2739	136
H3343-2	WATER WELL NW OF 6-1	63	59	29	4.3	929	132
H3343-3	W OF NW WATER WELL	95	38	13	3.9	785	156
Quality Control		NR	NR	NR	NR	1429	NR
True Value QC		NR	NR	NR	NR	1413	NR
% Accuracy		NR	NR	NR	NR	101	NR
Relative Percent Difference		NR	NR	NR	NR	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

		Cl^- (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/01/97	12/02/97	12/01/97	12/01/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	64	850	0	166	7.16	2399
H3343-2	WATER WELL NW OF 6-1	64	180	0	161	7.27	620
H3343-3	W OF NW WATER WELL	40	142	0	190	7.00	482
Quality Control		500	101	NR	NR	6.99	NR
True Value QC		500	100	NR	NR	7.00	NR
% Accuracy		100	101	NR	NR	100	NR
Relative Percent Difference		4.0	1.0	NR	NR	0.1	0.3
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

12/03/97
Date

H3343.XLS


Notura Energies
Featherstone Dev. Corp.
Midwest
Coastal O & G
Hanson Oil
Belco
Saddle St.
1-X
U S M I
State
Game Comm (S)
Del Apache
"Lorie St"
Read & Stevens
Hanson
Stallworth
Apache
STATE
Bridwell
T/A
Tenneco
Coastal O & G
Hanson Oil
Cities Serv.
La Ld & Expl.
Westland Corp
1996
62.72'
windmill
Read & Stevens
SWR
windmill
3-X
Approx 3200' from TRACT 6-1
to windmill.
Burns
Pan Am
2-CX
1-CX
Sun HBP
Coastal O & G HBP
Flying M St. #1 (Abo)
H. Zimmerman
Exxo
Southern Minerals St. #1 (Abo)
windmill
9 - 33
1056' From TRACT 9-4 to WINDMILL
U.S. MI
Exxlee
Howard
Southern Union
Shell 1-FMF
3 Kelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
La Ld & Expl
Coastal States HBP
Midwest
1-C
Ainsworth Gober Rchs Inc (S
BTA
1-FMS
STATE
Gober
Rchs Inc (S)
Shell
Union Tex
Southern Union
SWR
SWR
Midw
1-F
C+E
WB Richard MI
Morg McGuffin
J.D. Jones
H. Wright
U.S. MI
A Gober Rchs Inc (S)
A Gober Rchs Inc (S
Belco
Southwest Royalties
J. Markham etal
A Gober Rchs (S)
Midwest
A Gober Rchs (S
Warren Amer
SWR's
Gen-Fed 33-10
U.S. MI
Morg McGuffin
Exchange O & G MI
A Gober Rchs (S)
Midwest
Belco
"New Mex"
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
Sun
1-F
Texas Western
Fresh WATER Wells
IN AREA.
10 - 33
N

APPLICATION FOR AUTHORIZATION TO INJECT
FLYING M (SA) UNIT #27-1

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. OPERATOR: South West Royalties, Inc.

ADDRESS: P.O. Drawer 11390 Midland, Tx 79702

CONTACT PARTY: Nelson Patton PHONE: 800) 433-7945

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: ✓ Yes ____ No
If yes, give the Division order number authorizing the project R-3229 & R3033

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, *attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).*

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Nelson Patton TITLE: Area Supervisor

SIGNATURE: Nelson Patton DATE: 2-17-98

* 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 circumstance 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 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, PO Box 2088, Santa Fe, NM 87504-2088 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.

III.

WELL DATA SHEET

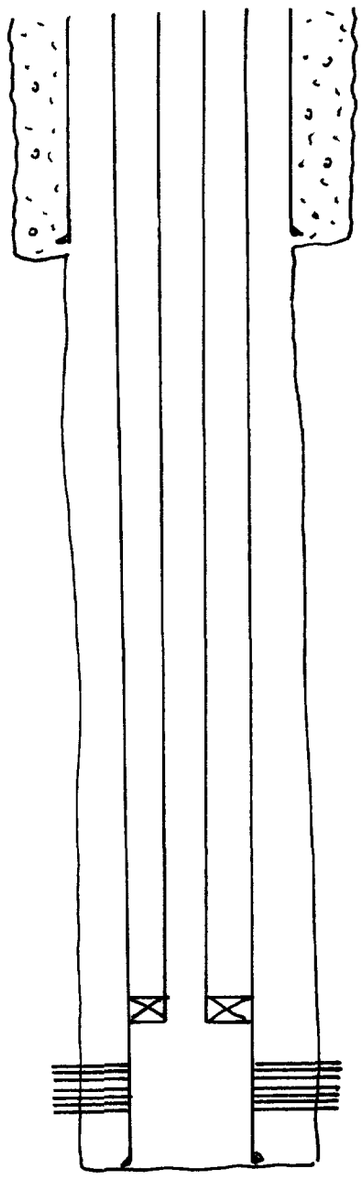
FLYING M (SA) UNIT #27-1

INJECTION WELL DATA SHEET

South West Royalties, Inc. — OPERATOR
Flying "M" (SA) Unit — LEASE

Tract 27-1	2120' FSL & 2120' FEL	28	T-9-S	R-33-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 8 5/8" Cemented with 225 sx.

TOC surface feet determined by VISUAL

Hole size 12 1/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 5 1/2" Cemented with 350 sx.

TOC 2700' feet determined by T. Survey

Hole size 7 7/8"

Total depth 4580'

Injection interval

4498 feet to 4530' feet
(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with Internally Plastic Coated (material) set in a Baker AD-1 (Tension) (brand and model) packer at 4400 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres
2. Name of Field or Pool (if applicable) Flying "M" (SA)
3. Is this a new well drilled for injection? ☐ Yes ☒ No

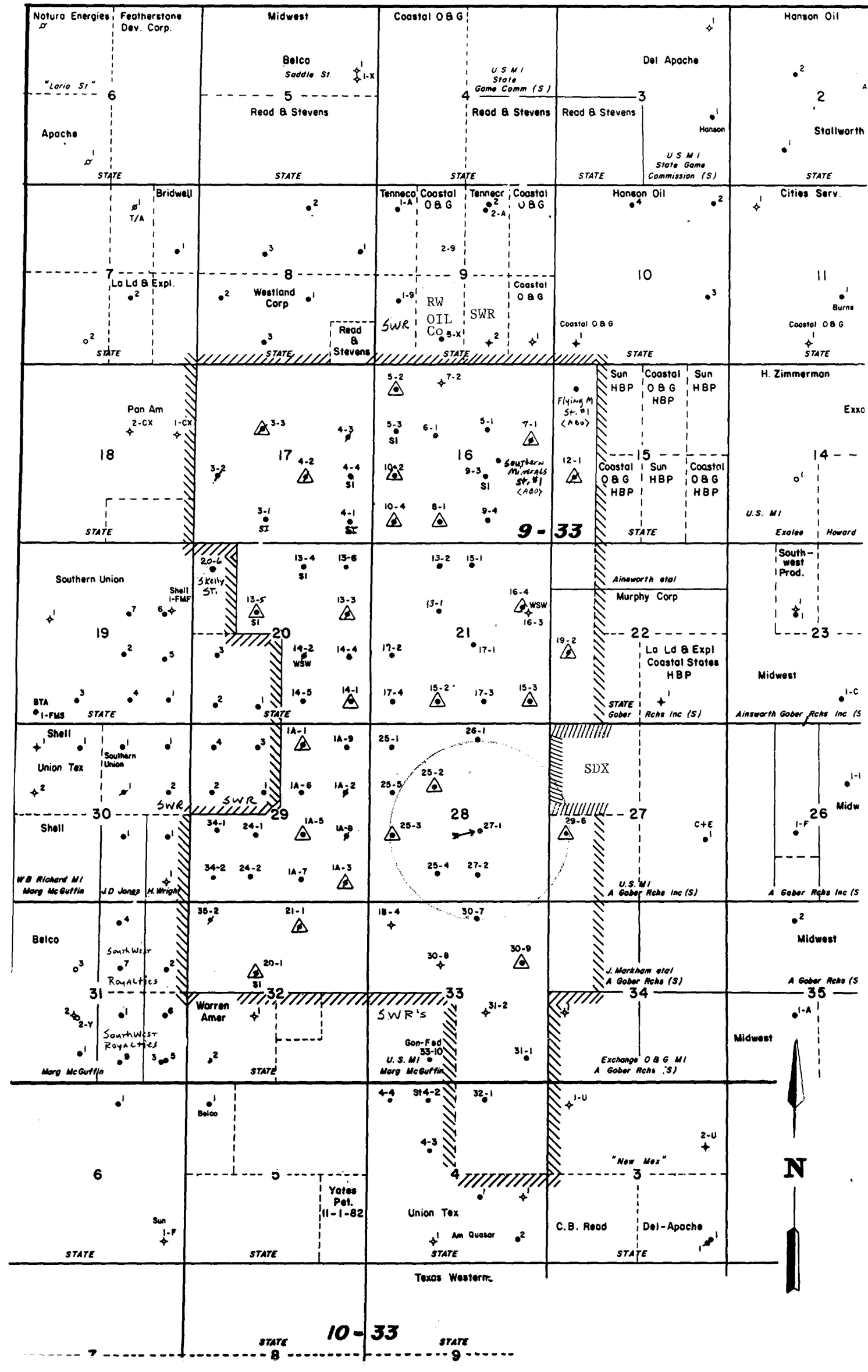
   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

   No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. All wells within the Flying "M" Unit are San Andres producers or injection wells. The Abo formation @ A depth of 8600' is productive to the North.

V.

MAP AREA OF REVIEW

FLYING M (SA) UNIT #27-1


Notura Energies
Featherstone Dev. Corp.
Midwest
Belco
Saddle St
1-X
Coastal O&G
U S M I State Game Comm (S)
Del Apache
Hanson Oil
"Lario St"
6
5
4
3
2
Read & Stevens
Apache
Hanson
Stallworth
STATE
U S M I State Game Commission (S)
Bridwell
T/A
Tenneco
1-A
Coastal O&G
2-A
2-9
Hanson Oil
Cities Serv.
7
8
9
10
11
La Ld & Expl.
Westland Corp
1-9
RW OIL Co
SWR
8-X
Coastal O&G
Burns
Read & Stevens
Pan Am
2-CX
1-CX
5-2
7-2
Flying M St. #1 (A&O)
Sun HBP
Coastal O&G HBP
H. Zimmerman
Exxo
18
17
16
15
14
3-3
4-3
4-2
3-2
4-4
5-3
6-1
5-1
7-1
10-2
9-3
Southern Minerals St. #1 (A&O)
12-1
10-4
8-1
9-4
9 - 33
U.S. MI
Exxlee
Howard
Southern Union
Shell 1-FMF
20-6
Skelly St.
13-4
13-6
13-2
15-1
Ainsworth etal
Murphy Corp
Southwest Prod.
19
20
21
22
23
13-5
13-3
16-4
WSW
16-3
13-1
14-2
WSW
14-4
17-2
17-1
19-2
La Ld & Expl
Coastal States HBP
Midwest
BTA 1-FMS
STATE
14-5
14-1
17-4
15-2
17-3
15-3
Gober
Rchs Inc (S)
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
1A-1
1A-9
25-1
26-1
SDX
25-2
25-5
1A-6
1A-2
SWR
30
29
28
27
26
34-1
24-1
1A-5
1A-8
25-3
27-1
29-6
C+E
1-F
Midw
Shell
34-2
24-2
1A-7
1A-3
25-4
27-2
W B Richard MI
Marg McGuffin
J D Jones
H. Wright
U.S. MI
A Gober Rchs Inc (S)
35-2
21-1
18-4
30-7
Belco
South West Royalties
30-8
30-9
J. Markham etal
A Gober Rchs (S)
Midwest
31
32
33
34
35
20-1
Warren Amer
SWR's
31-2
2-Y
Gon-Fed 33-10
U. S. MI
31-1
Exchange O&G MI
A Gober Rchs (S)
1-A
Midwest
Marg McGuffin
4-4
St 4-2
32-1
1-U
2-U
4-3
"New Mex"
6
5
4
3
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
Sun 1-F
STATE
Texas Western
10 - 33
7
8
9
N

VI.
TABULATION OF DATA
FLYING M (SA) UNIT #27-1

WELLS IN AREA OF REVIEW
APPLICATION FOR AUTHORIZATION TO INJECT
SOUTHWEST ROYALTIES, INC.

FLYING "M" (SA) UNIT
TRACT 30-#7
Location: 525' FNL & 2122' FEL
Sec. 33, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 10/67
Total Depth: 4580'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	298'	200
	4 ½"	4580'	250

Completion:

10/67) Perf'd 4528' – 4559'... acidized with 5000 gals. Of 28% acid...put on pump.

FLYING "M" (SA) UNIT
TRACT 27-#2
Location: 800' FSL & 2120' FEL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 4/68
Total Depth: 4600'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	361'	200
	5 ½"	4600'	350

Completion:

5/68) Perf'd 4492' – 4521' and acidized with 1000 gals. MCA + 3500 gals. 15% acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 25-#3
Location: 1980' FSL & 661' FWL
Sec. 28, T-9-S, R-33-E

Type: WIW
Date Drilled: 1/65
Total Depth: 4529'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	260'	200
	4 ½"	4529'	200

Completion:

6/65) Perf'd 4460' – 68' ...acidized with 1000 gals. BDA.
1/73) Converted to WI
10/84) Perf'd 4430' – 4470' and acidized with 3000 gals. 15% HCL resume injection.

FLYING "M" (SA) UNIT
TRACT 25-#2
Location: 1840' FWL & 1840' FNL
Sec. 28, T-9-S, R-33-E

Type: WIW
Date Drilled: 4/65
Total Depth: 4575'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	264'	200
	4 ½"	4575'	250

Completion:

5/65) Perf'd 4467' – 4495' ... acidized with 1000 gals. BDA + 10,000 gals. Of retarded acid.
11/67) Perf'd 4503' – 4515' and acidized with 6000 gals. Of 28% HCL acid.
2/70) Converted to WI.

FLYING "M" (SA) UNIT
TRACT 25-#4
Location: 849.6' FSL & 1987' FWL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil) T.A. 'ed
Date Drilled: 6/67
Total Depth: 4575'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	281'	200
	4 ½"	4573'	250

Completion:

7/67) Perf'd 4505' – 4522' acidized with 3000 gals. Of 28% HCL and 3000 gals. Of 3% HCL acid.
10/72) Perf'd 4476' – 4494' (squeezed perfs 4505'-4522') acidized with 1000 gals. 28% HCL, 2100 gals. 15% HCL, and 3000 gals. Of 3% HCL acid.
10/78) Perf'd 4505' –4522' acidized with 1000 gals. Of 15% HCL acid.

3/94) Set a CIBP @ 4426' and tested casing for NMOCD...well T.A.'ed.

FLYING "M" (SA) UNIT
TRACT 25-#5
Location: 662' FWL & 1979' FNL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/74
Total Depth: 4504'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	337'	300
	4 ½"	4504'	250

Completion:

6/74) Perf'd 4440' – 4481' and acidized with 1200 gals. Of 28% HCL, 2000 gals. Of 15% HCL, and 3000 gals. Of 3% HCL acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 26-#1
Location: 520' FNL & 2120' FEL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 4/66
Total Depth: 4600'

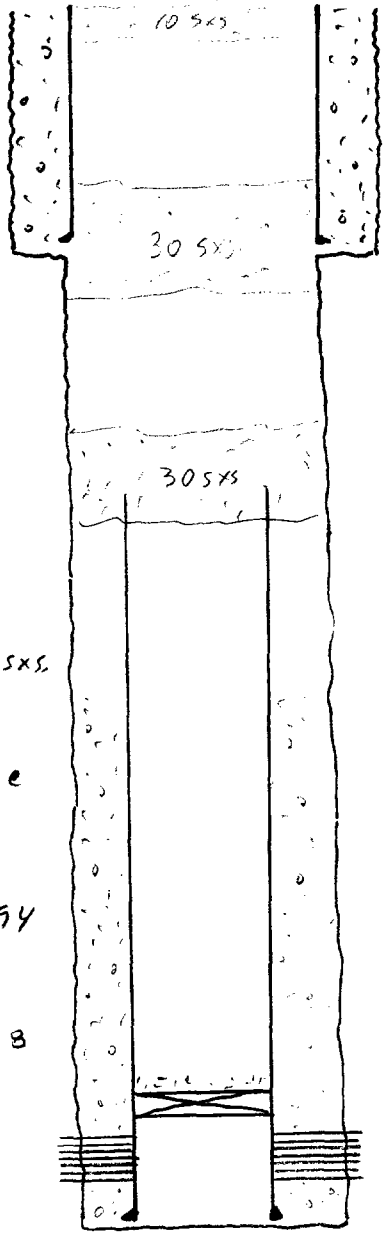
Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	328'	200
	4 ½"	4600'	350

Completion:

4/66) Perf'd 4492' – 4521' and acidized with 1065 gals. Of 15% NE HCL
3/67) Acidized with 3000 gals. Of Super X acid.
4/96) Acidized with 3000 gals. Of 15% NEFE HCL + salt diverter.

LEASE Flying "M" (SA) Unit WELL NO. Tract 29-6 OPERATOR Southwest Royalties, Inc.
TYPE WIW (P+A'ed) DATE DRILLED 10/67 ELEV 4311' GL
LOCATION 473 FT FROM THE West LINE 1979 FT FROM THE South LINE
UNIT LETTER L SECTION 27 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4658

COMPLETION 10/67) Perf'd 4581'-88', 4597'-4601', 06'-16', 20'-24, 4636'-38' Acidized w/ 10,000 gals. 28% Acid
P+A'ed 7/22/69



11 " HOLE

8 5/8 " 32 # CASING @ 288'
200 SXS CEMENT circ'd

7 7/8 " HOLE

P+A

CIBP @ 4424' w/ 2 sxs. cmt. on Top

4½" Csg cut off @ 1093'

30 sxs. 1194'-1094 Stub plug

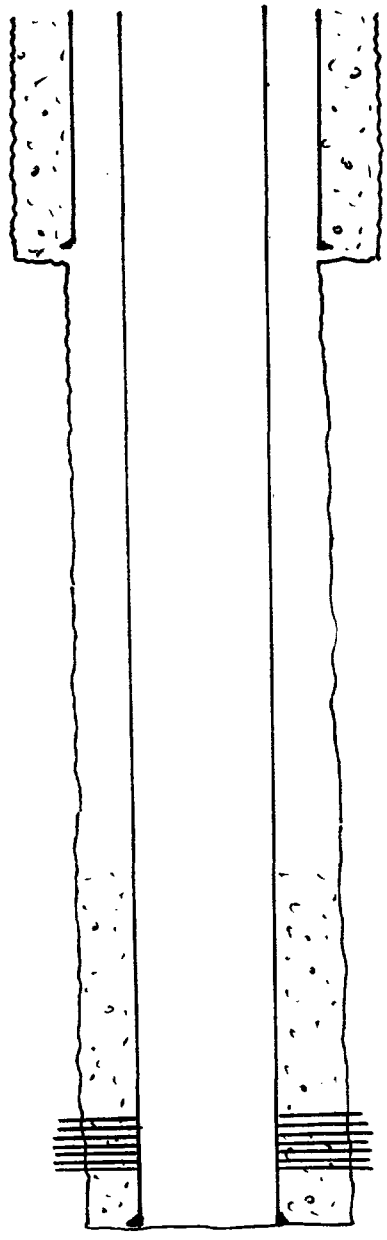
30 sxs. 338-238

10 sxs. surface

4½ " 9.5 # CASING @ 4658'
250 SXS CEMENT

LEASE Flying "M" (SA) Unit WELL NO. Tract 27-1 OPERATOR Southwest Royalties, Inc.
TYPE Producer DATE DRILLED 2/67 ELEV 4328'
LOCATION 2120 FT FROM THE South LINE 2120 FT FROM THE East LINE
UNIT LETTER J SECTION 28 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4580'

COMPLETION 3/67) Perf'd 4498', 4501', 4509, 10, 11, 12, 13, 14, 18, 19, 28, 29, & 4530'. Acidized w/ 2750 gals.



12 1/4 " HOLE

8 5/8 " 24 # CASING @ 359'
225 SXS CEMENT circ'd

7 7/8 " HOLE

5 1/2 " 14 # CASING @ 4580'
350 SXS CEMENT TOC @ 2700' (per TS)

VII. Proposed Operation

1. We anticipate the average injection rate and pressure to be 300 BWPD @ 800 psi. Anticipated maximum rate and pressure would be 1200 BWPD @ 2100 psi.

2. This is a closed system.

3. The fluid to be injected is predominantly water produced from within the Unit. If additional water volume is needed, fresh water will be utilized from a fresh water well that is located approximately 5 miles South of the Flying "M" Unit. This system has been in use for several years. San Andres water from producing wells outside the Unit is also used for make-up water.

VIII. The recommended injection zone in the subject well occurs in the San Andres Dolomite formation from 4498' – 4530' . This zone is approximately 728' below the top of the San Andres formation which was encountered @ 3770'.

The Lithologic description of the injection zone in the Flying "M" Field consists of a dense to porous dolomite with minor vertical fracturing. The porosity is vugular to intercrystaline. The interval from 4450' – 4520' has been the main producing interval in the Flying "M" Field since it was discovered. Geologically, it is known as the Slaughter producing zone of the San Andres.

The geologic name and depth to underground source of drinking water is the Ogallala formation, which occurs from 0' to 400' in this area.

IX. A small volume matrix acid stimulation will be performed on the well. This Stimulation will consist of 2000 – 4000 gals. Of 20% HCL acid.

X. This well was drilled in February of 1967 as the O. D. McCoy #1, operated by Southland Royalty Corporation. It is assumed that the logs were sent in to the State at that time.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SOUTHWEST ROYALTIES
ATTN: NELSON PATTON (JERRY MABREY)
P.O. BOX 11390
MIDLAND, TX 79702-9911
FAX TO:

Receiving Date: 12/01/97
Reporting Date: 12/03/97
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/27/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

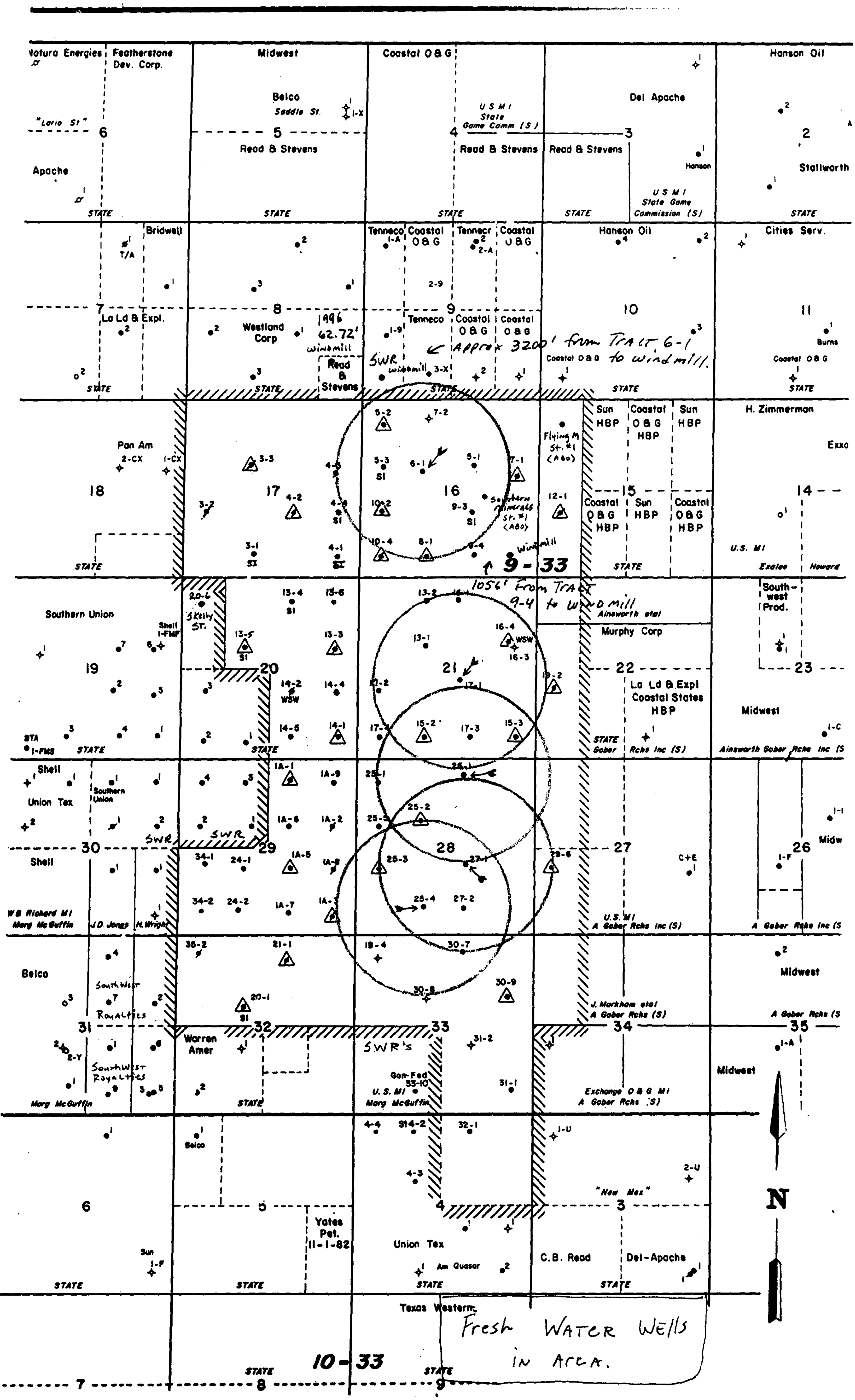
LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/03/97	12/02/97	12/02/97	12/02/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	0	302	90	5.5	2739	136
H3343-2	WATER WELL NW OF 6-1	63	59	29	4.3	929	132
H3343-3	W OF NW WATER WELL	95	38	13	3.9	785	156
Quality Control		NR	NR	NR	NR	1429	NR
True Value QC		NR	NR	NR	NR	1413	NR
% Accuracy		NR	NR	NR	NR	101	NR
Relative Percent Difference		NR	NR	NR	NR	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

		Cl^- (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/01/97	12/02/97	12/01/97	12/01/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	64	850	0	166	7.16	2399
H3343-2	WATER WELL NW OF 6-1	64	180	0	161	7.27	620
H3343-3	W OF NW WATER WELL	40	142	0	190	7.00	482
Quality Control		500	101	NR	NR	6.99	NR
True Value QC		500	100	NR	NR	7.00	NR
% Accuracy		100	101	NR	NR	100	NR
Relative Percent Difference		4.0	1.0	NR	NR	0.1	0.3
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

12/03/97
Date

H3343.XLS


Fresh Water Wells in Area.
1996 62.72' windmill
SWR windmill
← Approx 3200' from Tract 6-1 to windmill.
9-33
1056' From Tract 9-4 to windmill
Windmill
Flying M St. #1 (Abo)
Southern Minerals St. #1 (Abo)
10-33
Natura Energies
Featherstone Dev. Corp.
Midwest
Coastal O&G
Hanson Oil
Belco
Saddle St.
Del Apache
"Lario St"
Read & Stevens
USMI State Game Comm (S)
Apache
Stallworth
Bridwell
Tenneco
Cities Serv.
La Ld & Expl.
Westland Corp
Burns
Pan Am
Sun HBP
Coastal O&G HBP
H. Zimmerman
Southern Union
Shell
Skelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
La Ld & Expl Coastal States HBP
Union Tex
WSW
SWR
SWR's
Belco
SouthWest Royalties
Warren Amer
Gen-Fed
U.S. MI
Marg McGuffin
Exchange O&G MI
A Gober Rchs (S)
J. Markham etal
Yates Pet. 11-1-82
Am Quasar
C.B. Read
Del-Apache
"New Mex"
Texas Western
Sun
STATE
N

APPLICATION FOR AUTHORIZATION TO INJECT
FLYING M (SA) UNIT #26-1

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. OPERATOR: South West Royalties, Inc.

ADDRESS: P.O. Drawer 11390 Midland, Tx 79702

CONTACT PARTY: Nelson Patton PHONE: 800-433-7945

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: ✓ Yes ____ No
If yes, give the Division order number authorizing the project R-3229 & R3033

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Nelson Patton TITLE: Area Supervisor

SIGNATURE: Nelson Patton DATE: 2-17-98

* 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 circumstance 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 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, PO Box 2088, Santa Fe, NM 87504-2088 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.

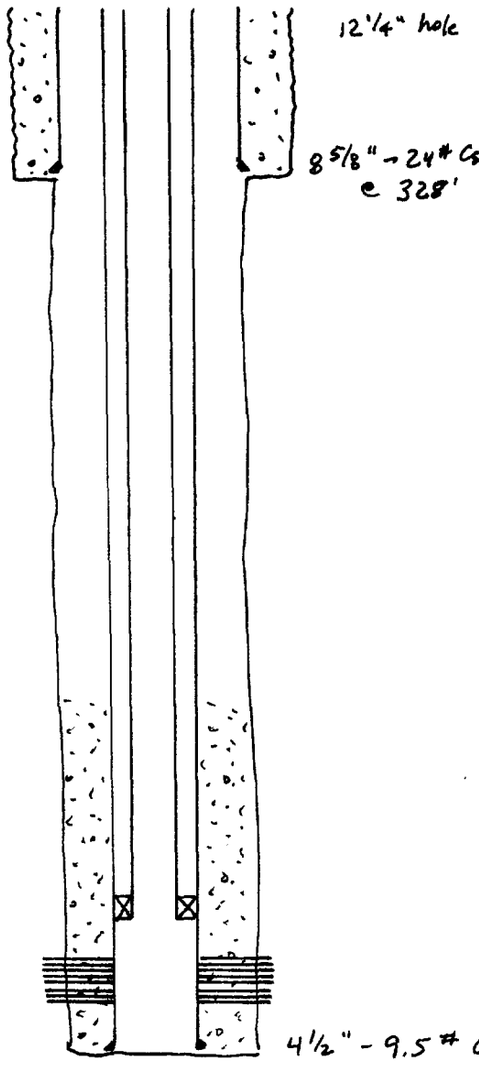
III.
WELL DATA SHEET
FLYING M (SA) UNIT #26-1

INJECTION WELL DATA SHEET

South West Royalties, Inc. (OPERATOR) — Flying "M" (SA) Unit (LEASE)

TRACT 26-1	520' FNL & 2120' FEL	28	T-9-S	R-33-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 8 5/8" Cemented with 200 sx.

TOC Surface feet determined by visual

Hole size 12 1/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4 1/2" Cemented with 350 sx.

TOC 3500 feet determined by Temp. Survey

Hole size 7 7/8"

Total depth 4600'

Injection interval

4492 feet to 4521 feet

(perforated) or open-hole, indicate which)

Tubing size 2 3/8" lined with Internal Plastic Coating (material) set in a Baker AD-1 (Tension) (brand and model) packer at 4395 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Flying "M" (SA)

3. Is this a new well drilled for injection? ☐ Yes ☒ No

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

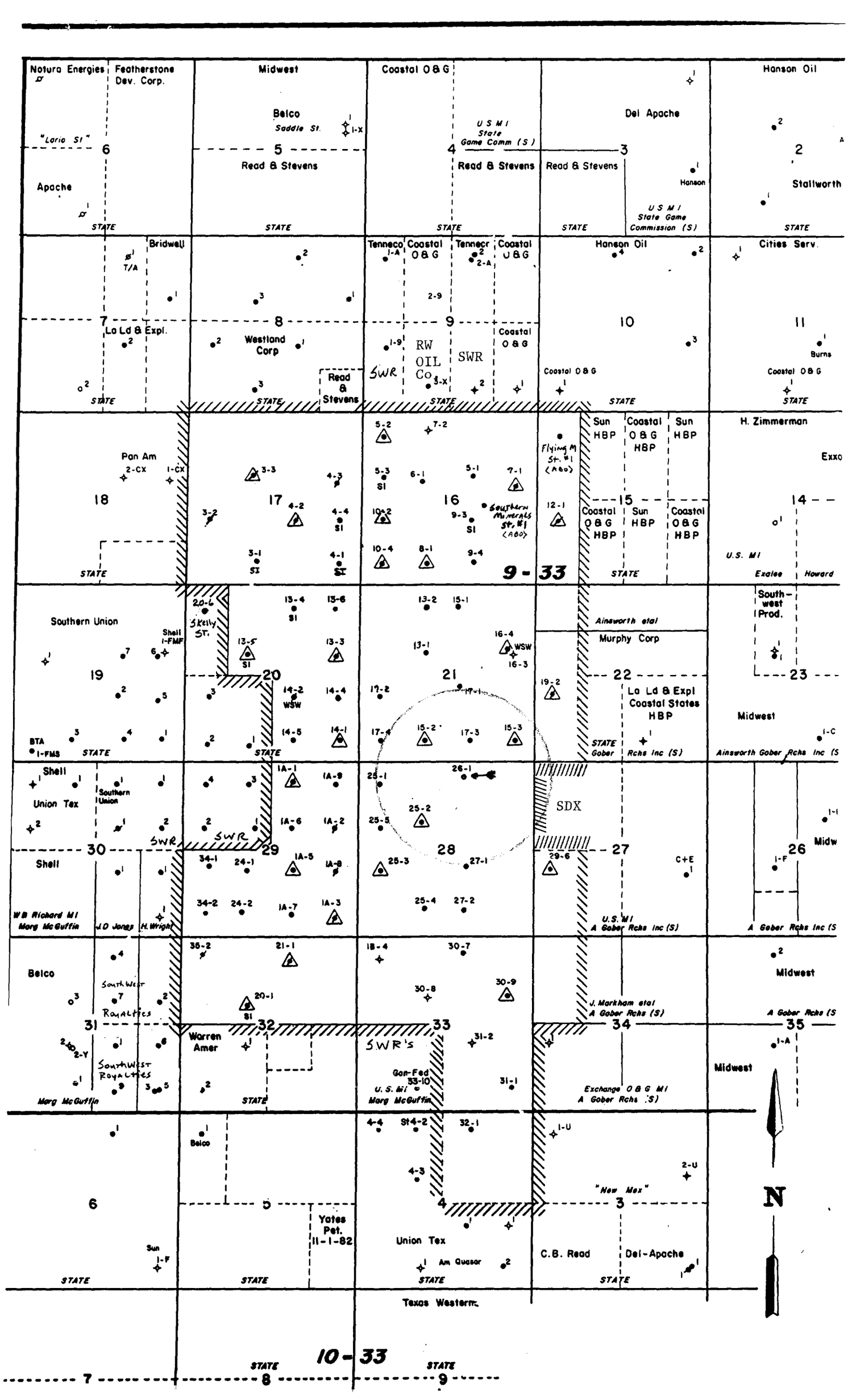
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. All wells within the Flying "M" Unit are San Andres producers or injecters. The Abo formation @ a depth of 8600' is productive in the area.

V.

MAP AREA OF REVIEW

FLYING M (SA) UNIT #26-1


Notura Energies
Featherstone Dev. Corp.
"Lario St"
Apache
Midwest
Belco
Saddle St.
Read & Stevens
Coastal O&G
U S M I State Game Comm (S)
Del Apache
Hanson
U S M I State Game Commission (S)
Hanson Oil
Stallworth
Bridwell
T/A
La Ld & Expl.
Westland Corp
Tenneco
Coastal O&G
RW OIL Co
SWR
Hanson Oil
Cities Serv.
Burns
Pan Am
Sun HBP
Coastal O&G HBP
H. Zimmerman
Exxo
Flying M St. #1 (A60)
Southern Minerals St. #1 (A60)
9 - 33
U.S. MI
Exalee
Howard
Southern Union
Shell I-FMF
Skelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
La Ld & Expl Coastal States HBP
Midwest
BTA I-FMS
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
SDX
Midw
Shell
WB Richard MI Morg McGuffin
J.O. Jones
H. Wright
U.S. MI A Gober Rchs Inc (S)
Belco
SouthWest Royalties
Midwest
J. Markham etal A Gober Rchs (S)
Warren Amer
SWR's
Gen-Fed 33-10
U.S. MI Morg McGuffin
Exchange O&G MI A Gober Rchs (S)
Midwest
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
"New Mex"
Sun
Texas Western
10 - 33
STATE
N

VI.
TABULATION OF DATA
FLYING M (SA) UNIT #26-1

WELLS IN AREA OF REVIEW
APPLICATION FOR AUTHORIZATION TO INJECT
SOUTHWEST ROYALTIES, INC.

FLYING "M" (SA) UNIT
TRACT 27-#1
Location: 2120' FSL & 2120' FEL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 2/67
Total Depth: 4580'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	359'	225
	5 ½"	4580'	350

Completion:

5/65) Perf'd 4498' – 4530' and acidized with 2750 gals. Of 15% HCL acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 25-#5
Location: 662' FWL & 1979' FNL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/74
Total Depth: 4504'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	337'	300
	4 ½"	4504'	250

Completion:

6/65) Perf'd 4440' – 4481' acidized with 1200 gals. 28% HCL, 2000 gals. 15% HCL, and 3000 gals. Of 3% HCL acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 25-#2
Location: 1840' FWL & 1840' FNL
Sec. 28, T-9-S, R-33-E

Type: WIW
Date Drilled: 4/65
Totla Depth: 4575'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	264'	200
	4 ½"	4575'	250

Completion:

5/65) Perf'd 4467' – 4495' acidized with 1000 gals. BDA + 10,000 gals. Of retarded acid.
11/67) Perf'd 4503' – 4515' acidized with 6000 gals. 28% HCL acid.
2/70) Converted to WI.

FLYING "M" (SA) UNIT
TRACT 17-#4
Location: 660' FSL & 665' FWL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/74
Total Depth: 4502'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	365'	300
	4 ½"	4502'	250

Completion:

7/74) Perf'd 4435' – 4475' acidized with 1500 gals. Of 28% HCL acid, 3000 gals. 15% HCL acid, and 4500 gals. Of 3% HCL acid.
7/74) Set Cement Retainer @ 4469' and squeezed perfs with 200 bbls. Of injectrol + 50 sxs. Cement (perfs squeezed 4471' – 4475').

FLYING "M" (SA) UNIT
TRACT 25-#1
Location: 660' FNL & 661' FWL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 8/64
Total Depth: 5170'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	263'	200
	4 ½"	5170'	450

Completion:

8/64) Perf'd 4490' – 4504' acidized with 1000 gals. BDA.
8/64) Perf'd 4882' – 4900' acidized with 1000 gals. BDA.
8/64) Perf'd 4859' – 66' acidized with 1000 gals. BDA.
8/64) Set CIBP @ 4560'
5/67) Perf'd 4450' – 4480' acidized with 3000 gals. 28% HCL acid.

FLYING "M" (SA) UNIT
TRACT 15-#2
Location: 660' FSL & 1985' FWL
Sec. 21, T-9-S, R-33-E

Type: WIW
Date Drilled: 6/64
Total Depth: 4570'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	265'	200
	4 ½"	4570'	300

Completion:

7/64) Perf'd 4468' – 4506' acidized with 3000 gals. 28% HCL acid + 3000 gals. Of 3% HCL acid.

FLYING "M" (SA) UNIT
TRACT 15-#3
Location: 525' FSL & 797' FEL
Sec. 21, T-9-S, R-33E

Type: WIW
Date Drilled: 12/66
Total Depth: 4605'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	264'	200
	4 ½"	4604'	250

Completion:

1/67) Perf'd 4516' – 4536' acidized with 1000 gals. BDA.
1/73) Converted to WI.
4/91) Acidized with 2000 gals. 20% HCL acid.

FLYING "M" (SA) UNIT
TRACT 17-#3
Location: 1985' FEL & 659' FSL
Sec. 21, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/67
Total Depth: 4580'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	295'	250
	4 ½"	4579'	277

Completion:

6/67) Perf'd 4502' – 4536' acidized with 3000 gals. 28% HCL acid, 3000 gals. Of 3% HCL acid... re-acidized with 1500 gals. 28% HCL acid.
12/92) Perf'd 4486' – 4502', 4528' – 4533' ... acidized with 2850 gals. 15% HCL.

VII. Proposed Operation

1. We anticipate the average injection rate and pressure to be 300 BWPD @ 800 psi. Anticipated maximum rate and pressure would be 1200 BWPD @ 2100 psi.

2. This is a closed system.

3. The fluid to be injected is predominantly water produced from within the Unit. If additional water volume is needed, fresh water will be utilized from a fresh water well that is located approximately 5 miles South of the Flying "M" Unit. This system has been in use for several years. San Andres water from producing wells outside the Unit is also used for make-up water.

VIII. The recommended injection zone in the subject well occurs in the San Andres Dolomite formation from 4492' – 4521'. This zone is approximately 759' below the top of the San Andres formation which was encountered @ 3733'.

The Lithologic description of the injection zone in the Flying "M" Field consists of a dense to porous dolomite with minor vertical fracturing. The porosity is vugular to intercrystaline. The interval from 4450' – 4520' has been the main producing interval in the Flying "M" Field since it was discovered. Geologically, it is known as the Slaughter producing zone of the San Andres.

The geologic name and depth to underground source of drinking water is the Ogallala formation, which occurs from 0' to 400' in this area.

IX. A small volume matrix acid stimulation will be performed on the well. This Stimulation will consist of 2000 – 4000 gals. Of 20% HCL acid.

X. This well was drilled in April of 1966 as the Grady Ferguson #1, operated by Southland Royalty Company. It is assumed that the logs were sent in to the State at that time.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SOUTHWEST ROYALTIES
ATTN: NELSON PATTON (JERRY MABREY)
P.O. BOX 11390
MIDLAND, TX 79702-9911
FAX TO:

Receiving Date: 12/01/97
Reporting Date: 12/03/97
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/27/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

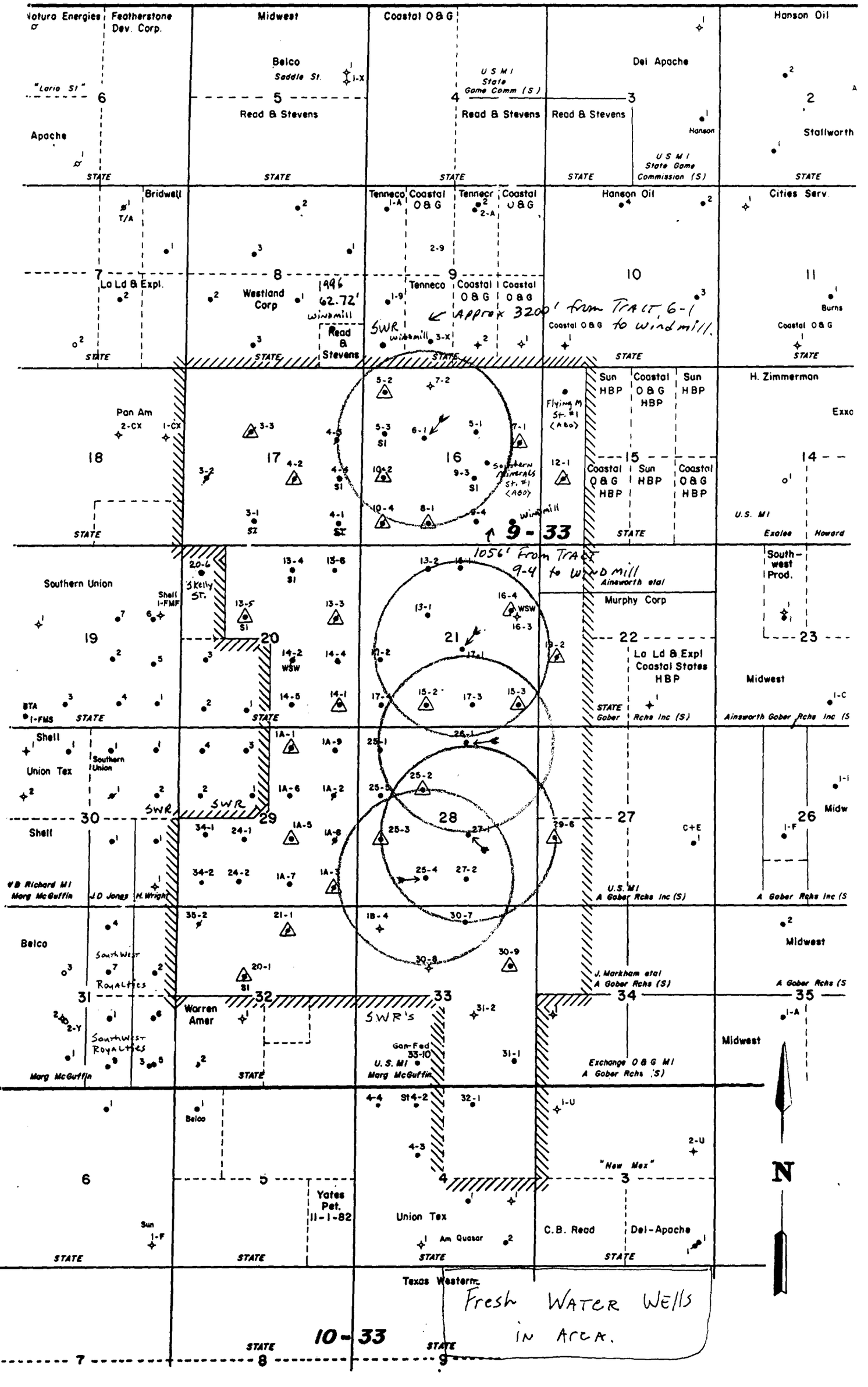
LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/03/97	12/02/97	12/02/97	12/02/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	0	302	90	5.5	2739	136
H3343-2	WATER WELL NW OF 6-1	63	59	29	4.3	929	132
H3343-3	W OF NW WATER WELL	95	38	13	3.9	785	156
Quality Control		NR	NR	NR	NR	1429	NR
True Value QC		NR	NR	NR	NR	1413	NR
% Accuracy		NR	NR	NR	NR	101	NR
Relative Percent Difference		NR	NR	NR	NR	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl⁻ (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/01/97	12/02/97	12/01/97	12/01/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	64	850	0	166	7.16	2399
H3343-2	WATER WELL NW OF 6-1	64	180	0	161	7.27	620
H3343-3	W OF NW WATER WELL	40	142	0	190	7.00	482
Quality Control		500	101	NR	NR	6.99	NR
True Value QC		500	100	NR	NR	7.00	NR
% Accuracy		100	101	NR	NR	100	NR
Relative Percent Difference		4.0	1.0	NR	NR	0.1	0.3
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

Date 12/03/97

L3343 XLS


Notura Energies
Featherstone Dev. Corp.
Midwest
Belco
Saddle St.
1-X
Coastal O & G
U S M I State Game Comm (S)
Del Apache
Hanson Oil
"Lario St"
Apache
Read & Stevens
Hanson
Stallworth
U S M I State Game Commission (S)
STATE
Bridwell
T/A
Tenneco
Coastal O & G
Cities Serv.
La Ld & Expl.
Westland Corp
1496
62.72'
windmill
Read & Stevens
SWR
windmill
Approx 3200' from TRACT 6-1 to windmill.
Burns
Pan Am
2-CX
1-CX
Sun HBP
Coastal O & G HBP
H. Zimmerman
Exxo
Flying M St. #1 (A80)
Southern Minerals St. #1 (A80)
windmill
9-33
1056' From TRACT 9-4 to WINDMILL
Southern Union
Shell 1-FMF
Kelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
La Ld & Expl
Coastal States HBP
Midwest
BTA 1-FMS
Gober Rchs Inc (S)
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
SWR
Midw
U.S. MI
A Gober Rchs Inc (S)
V B Richard MI
Marg McGuffin
J.D Jones
H. Wright
Belco
SouthWest Royalties
J. Markham etal
A Gober Rchs (S)
Warren Amer
SWR's
Gen-Fed 33-10
U.S. MI
Marg McGuffin
Exchange O & G MI
A Gober Rchs (S)
Midwest
Belco
"New Mex"
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
Sun 1-F
Texas Western
10-33
Fresh WATER WELLS IN AREA.

APPLICATION FOR AUTHORIZATION TO INJECT
FLYING M (SA) UNIT #25-4

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe. NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. OPERATOR: South West Royalties, Inc.

ADDRESS: P.O. Drawer 11390 Midland, Tx 79702

CONTACT PARTY: Nelson Patton PHONE: 800) 433-7945

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: ✓ Yes ____ No
If yes, give the Division order number authorizing the project R-3229 + R8033

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Nelson Patton TITLE: Area Supervisor

SIGNATURE: Nelson Patton DATE: 2-17-98

* 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 circumstance of the earlier submittal. ____

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

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(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

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(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, PO Box 2088, Santa Fe, NM 87504-2088 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.

III.

WELL DATA SHEET

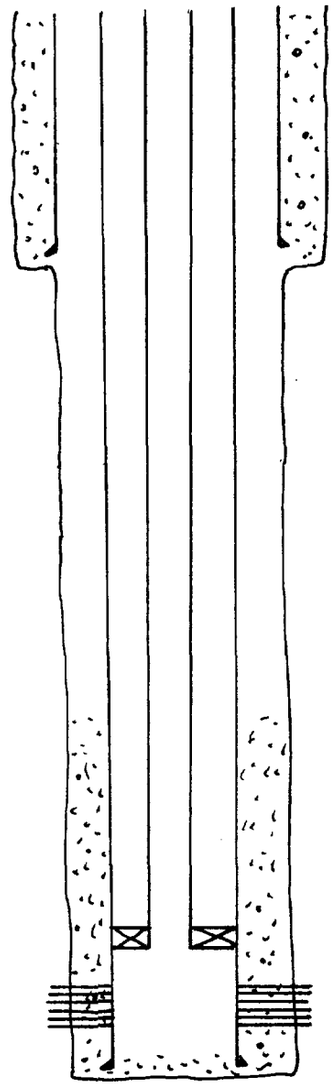
FLYING M (SA) UNIT #25-4

INJECTION WELL DATA SHEET

South West Royalties, Inc. (OPERATOR) Flying "M" (SA) Unit (LEASE)

Tract 25-4	849.6' FSL & 1987' FWL	28	T-9-S	R-33-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 8 5/8" Cemented with 200 sx.

TOC Surface feet determined by VISUAL

Hole size 11"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4½" Cemented with 250 sx.

TOC 3450 feet determined by CALC'd

Hole size 7 7/8"

Total depth 4575'

Injection interval

4476 feet to 4522 feet

(perforated) or open-hole, indicate which)

Tubing size 2 3/8" lined with Internally Plastic Coated (material) set in a Baker AD-1 (Tension) (brand and model) packer at 4380' feet

(or describe any other casing-tubing seal).

Other Data

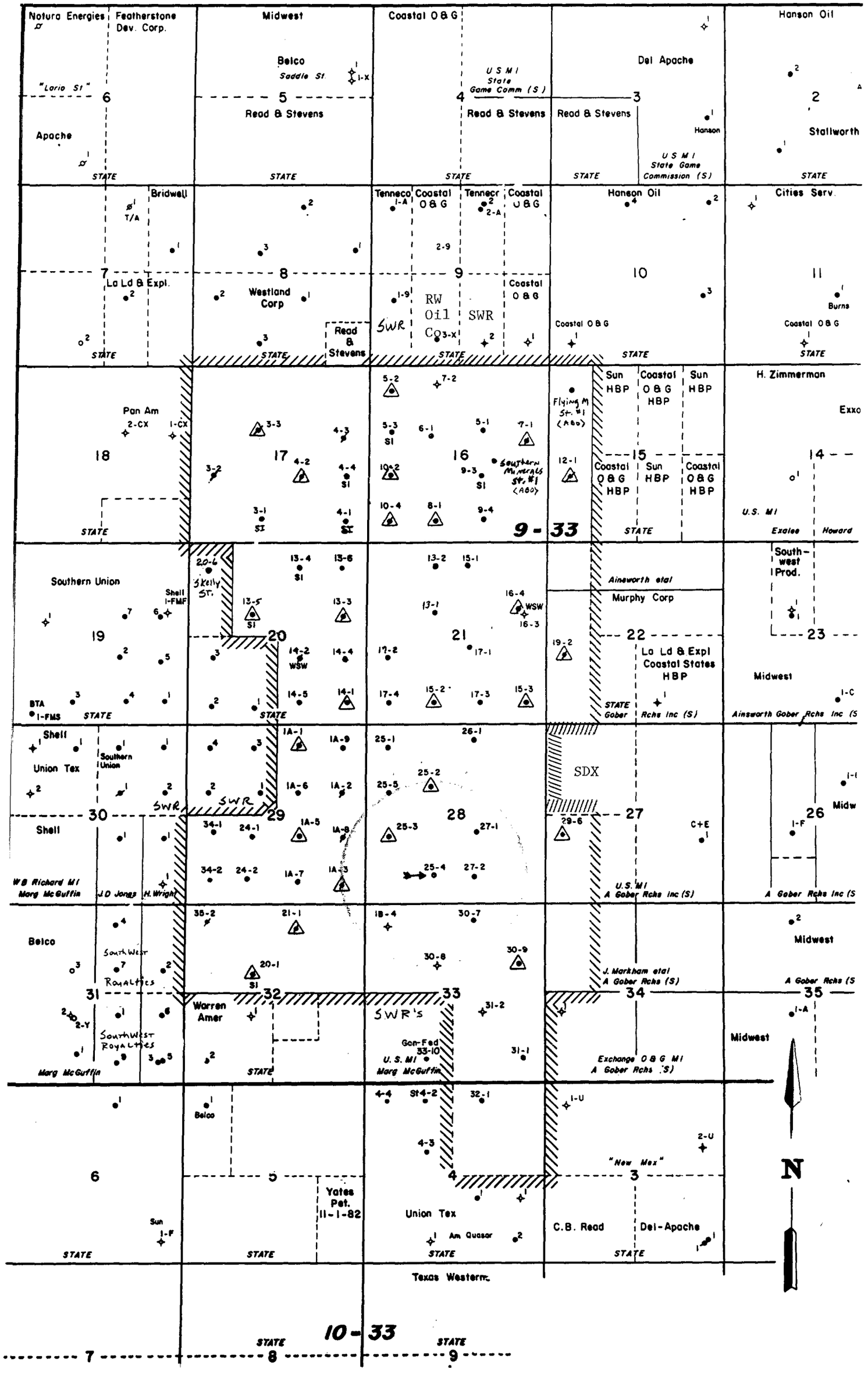
1. Name of the injection formation San Andres
2. Name of Field or Pool (if applicable) Flying "M" (SA)
3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? oil producer
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. All wells within the Flying "M" Unit Are San Andres producers or injection wells. The Abo formation @ a depth of 8600' is productive to the North.

V.

MAP AREA OF REVIEW

FLYING M (SA) UNIT #6-1


Notura Energies
Featherstone Dev. Corp.
"Lorio St"
Apache
STATE
Midwest
Belco
Saddle St.
Read & Stevens
STATE
Coastal O&G
U S M I State Game Comm (S)
Read & Stevens
STATE
Del Apache
Read & Stevens
Hanson
U S M I State Game Commission (S)
STATE
Hanson Oil
Stallworth
STATE
Bridwell
T/A
La Ld & Expl.
Westland Corp
Read & Stevens
Tenneco
Coastal O&G
RW Oil Co
SWR
Coastal O&G
Hanson Oil
Coastal O&G
Cities Serv.
Burns
Coastal O&G
Pan Am
2-CX
1-CX
Southern Mineral St. #1 (A60)
Flying M St. #1 (A60)
Sun HBP
Coastal O&G HBP
Sun HBP
H. Zimmerman
Exxo
U.S. MI
Exalee
Howard
9 - 33
Southern Union
Shell 1-FMS
Skelly St.
BTA 1-FMS
STATE
Ainsworth etal
Murphy Corp
La Ld & Expl
Coastal States HBP
Gober Rchs Inc (S)
Ainsworth Gober Rchs Inc (S
Southwest Prod.
Midwest
Shell
Union Tex
Southern Union
SWR
Shell
W B Richard MI
Marg McGuffin
J.D Jones
H. Wright
SDX
U.S. MI
A Gober Rchs Inc (S)
A Gober Rchs Inc (S
Midw
Belco
Southwest Royalties
Marg McGuffin
Warren Amer
SWR's
Gen-Fed 33-10
U.S. MI
Marg McGuffin
J. Markham etal
A Gober Rchs (S)
Exchange O&G MI
A Gober Rchs (S)
Midwest
A Gober Rchs (S
Midwest
Belco
Yates Pet. 11-1-82
Sun 1-F
STATE
Union Tex
Am Quasar
"New Mex"
C.B. Read
Del-Apache
Texas Western
10 - 33
N

VI.

TABULATION OF DATA
FLYING M (SA) UNIT #25-4

WELLS IN AREA OF REVIEW
APPLICATION FOR AUTHORIZATION TO INJECT
SOUTHWEST ROYALTIES, INC.

FLYING "M" (SA) UNIT
TRACT 25-#2
Location: 1840' FWL & 1840' FNL
Sec. 28, T-9-S, R-33-E

Type: WIW
Date Drilled: 4 /65
Total Depth: 4575'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	264'	200
	4 ½"	4575'	250

Completion:

5/65) Perf'd 4467' – 4495' acidized with 1000 gals. Of BDA + 10,000 gals. Of retarded acid.
11/67) Perf'd 4503' – 4515' and acidized with 6000 gals. Of 28% HCL acid.
2/70) Converted to WIW.

FLYING "M" (SA) UNIT
TRACT 25-#3
Location: 1980' FSL & 661' FWL
Sec. 28, T-9-S, R-33-E

Type: WIW
Date Drilled: 1/65
Total Depth: 4529'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	260'	200
	4 ½"	4529'	200

Completion:

6/65) Perf'd 4460' – 68' acidized with 1000 gals. BDA.
1/73) Converted to WIW
10/84) Perf'd 4430' – 4470' acidized with 3000 gals. 15% HCL acid and resume WI.

FLYING "M" (SA) UNIT
TRACT 27-#2
Location: 800' FSL & 2120' FEL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 4/68
Totla Depth: 4600'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	361'	200
	5 ½"	4600'	350

Completion:

5/68) Perf'd 4492' – 4521' acidized with 1000 gals. MCA + 3500 gals. 15% HCL acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 30-#7
Location: 525' FNL & 2122' FEL
Sec. 33, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 10/67
Total Depth: 4580'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	298'	200
	4 ½"	4580'	250

Completion:

10/67) Perf'd 4528' –4559' acidized with 5000 gals. Of 28% HCL acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 27-#1
Location: 2120' FSL & 2120' FEL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 2/67
Total Depth: 4580'

Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	359'	225
	5 ½"	4580'	350

Completion:

3/67) Perf'd 4498' – 4530' acidized with 2750 gals. 15% HCL acid. Put on pump.

FLYING "M" (SA) UNIT
TRACT 25-#5
Location: 662' FWL & 1979' FNL
Sec. 28, T-9-S, R-33-E

Type: Producer (Oil)
Date Drilled: 6/74
Total Depth: 4504'

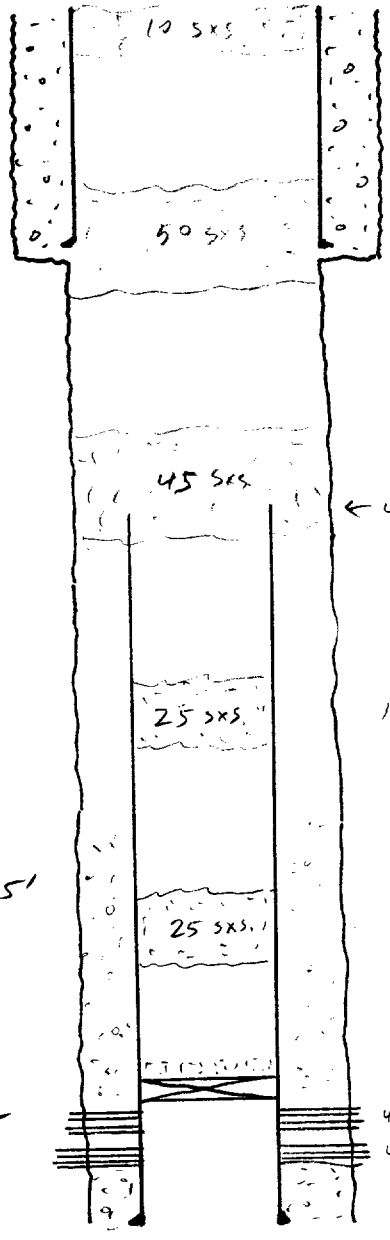
Casing Record:	SIZE	DEPTH	SACKS CEMENT
	8 5/8"	337'	300
	4 ½"	4504'	250

Completion:

6/65) Perf'd 4440' – 4481' acidized with 1200 gals. 28% HCL, 2000 gals. 15% HCL, and 3000 gals. Of 3% HCL acid. Put on Pump.

LEASE Flying "M" (SA) Unit WELL NO. Tract 18-4 OPERATOR Southwest Royalties, Inc.
TYPE WIW (P&A) DATE DRILLED 7/65 ELEV 4284
LOCATION 662 FT FROM THE West LINE 659.5 FT FROM THE North LINE
UNIT LETTER D SECTION 33 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4534

COMPLETION 7/65) Perf'd 4424'-35' Acidized w/ 10,000 gals. retarded acid + frac w/ 25,000 gals. slick water and 18,500# sand. 7/65) Perf'd 4455-62, 4476-79, 4486'-88'
3/66) Converted to WIW P&A'ed 3/27/74



12 1/4" HOLE

8 5/8" 24 # CASING @ 270'
200 SXS CEMENT circ'd

7 7/8" HOLE

← 4 1/2" Cut off @ 1085'

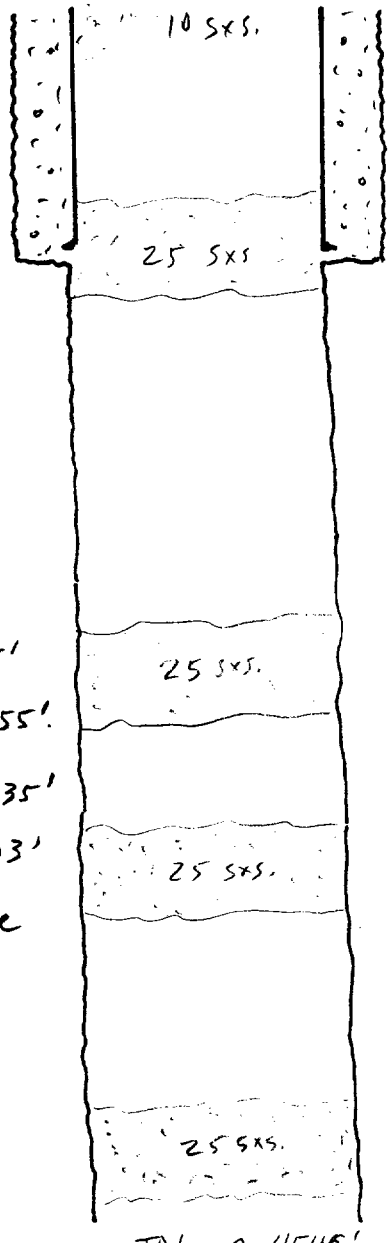
P&A
3/25/74 to 3/27/74

Set CIBP @ 4400'
3 sxs. on top
25 sxs. @ 3000'
25 sxs @ 1361'
Cut 4 1/2" Csg @ 1085'
45 sxs @ 1084'
50 sxs @ 300'
10 sxs. surface

4 1/2" 9.5 # CASING @ 4534'
227 SXS CEMENT

LEASE Flying "M" (SA) Unit WELL NO. Tract 30-8 OPERATOR South West Royalties, Inc.
TYPE D+A DATE DRILLED 11/25/67 ELEV 4310' GL
LOCATION 2119 FT FROM THE West LINE 1844 FT FROM THE FNL LINE
UNIT LETTER F SECTION 33 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4546'

COMPLETION TD'ed 12/3/67 @ 4546' cored & ran GR/Neutron log... showed to be non-productive. P+A'ed 12/5/67.



11 " HOLE

8 5/8 " 32 # CASING @ 268'
200 SXS CEMENT circ'd.

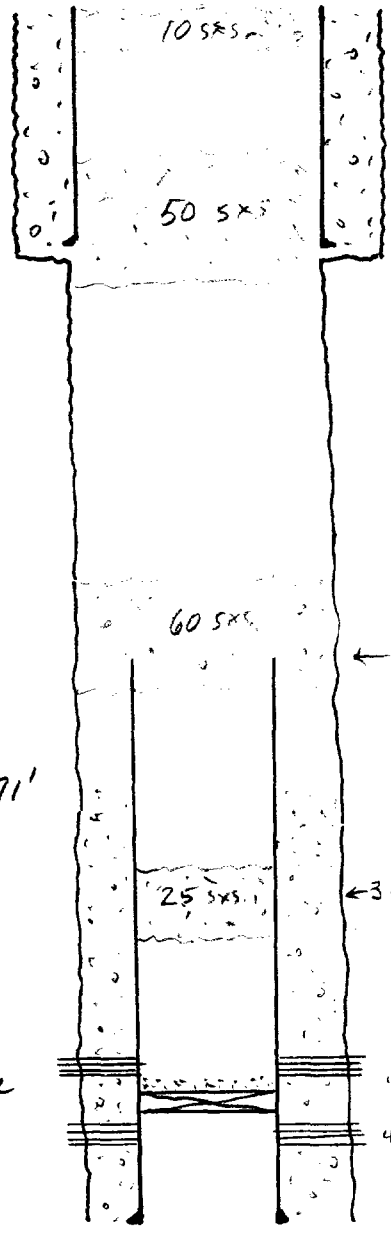
7 7/8 " HOLE

25 SXS. 4470'-4515'
25 SXS. 2510'-2555'.
25 SXS. 1890'-1935'
25 SXS. 243'-293'
10 SXS. Surface

TD'ed @ 4546'

LEASE Flying "M" (SA) Unit WELL NO. Tract 1A-3 OPERATOR Southwest Royalties, Inc.
TYPE WIW (P+A'ed) DATE DRILLED 6/65 ELEV 4301
LOCATION 661 FT FROM THE East LINE 660 FT FROM THE South LINE
UNIT LETTER P SECTION 29 TOWNSHIP 9-S RANGE 33-E
COUNTY Lea STATE NM TD 4520

COMPLETION 65) Perf'd 4400'-4406', 4412'-17' Acidize w/ 1000 gals.
12/67) Perf'd 4390'-96'
3/68) Converted to WIW SI 12/70 P+A'ed 4/4/74



12 1/4 " HOLE

8 5/8 " 24 # CASING @ 282'
200 SXS CEMENT circ'd

7 7/8 " HOLE

← 4 1/2" Csg. cut off @ 1871'

P+A
4-1-74 to 4-4-74

CIBP @ 4400' w/
3 sxs. cmt on Top

Cut 4 1/2" csg. @ 1871'
+ POH

25 sxs. @ 3000'
60 sxs. @ 1870'
50 sxs. @ 300'
10 sxs. @ surface

4 1/2 " 9.5 # CASING @ 4520'
225 SXS CEMENT

VII. Proposed Operation

1. We anticipate the average injection rate and pressure to be 300 BWPD @ 800 psi. Anticipated maximum rate and pressure would be 1200 BWPD @ 2100 psi.

2. This is a closed system.

3. The fluid to be injected is predominantly water produced from within the Unit. If additional water volume is needed, fresh water will be utilized from a fresh water well that is located approximately 5 miles South of the Flying "M" Unit. This system has been in use for several years. San Andres water from producing wells outside the Unit is also used for make-up water.

VIII. The recommended injection zone in the subject well occurs in the San Andres Dolomite formation from 4476' – 4522'. This zone is approximately 736' below the top of the San Andres formation which was encountered @ 3740'.

The Lithologic description of the injection zone in the Flying "M" Field consists of a dense to porous dolomite with minor vertical fracturing. The porosity is vugular to intercrystaline. The interval from 4450' – 4520' has been the main producing interval in the Flying "M" Field since it was discovered. Geologically, it is known as the Slaughter producing zone of the San Andres.

The geologic name and depth to underground source of drinking water is the Ogallala formation which occurs from 0' to 400' in this area.

IX. A small volume matrix acid stimulation will be performed on the well. This Stimulation will consist of 2000 – 4000 gals. Of 20% HCL acid.

X. This well was drilled in June of 1967 as the Flying "M" (SA) Unit Tract 22-#4, operated by Coastal States Gas Producing Company. It is assumed that the logs were sent in to the State at that time.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SOUTHWEST ROYALTIES
ATTN: NELSON PATTON (JERRY MABREY)
P.O. BOX 11390
MIDLAND, TX 79702-9911
FAX TO:

Receiving Date: 12/01/97
Reporting Date: 12/03/97
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 11/27/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

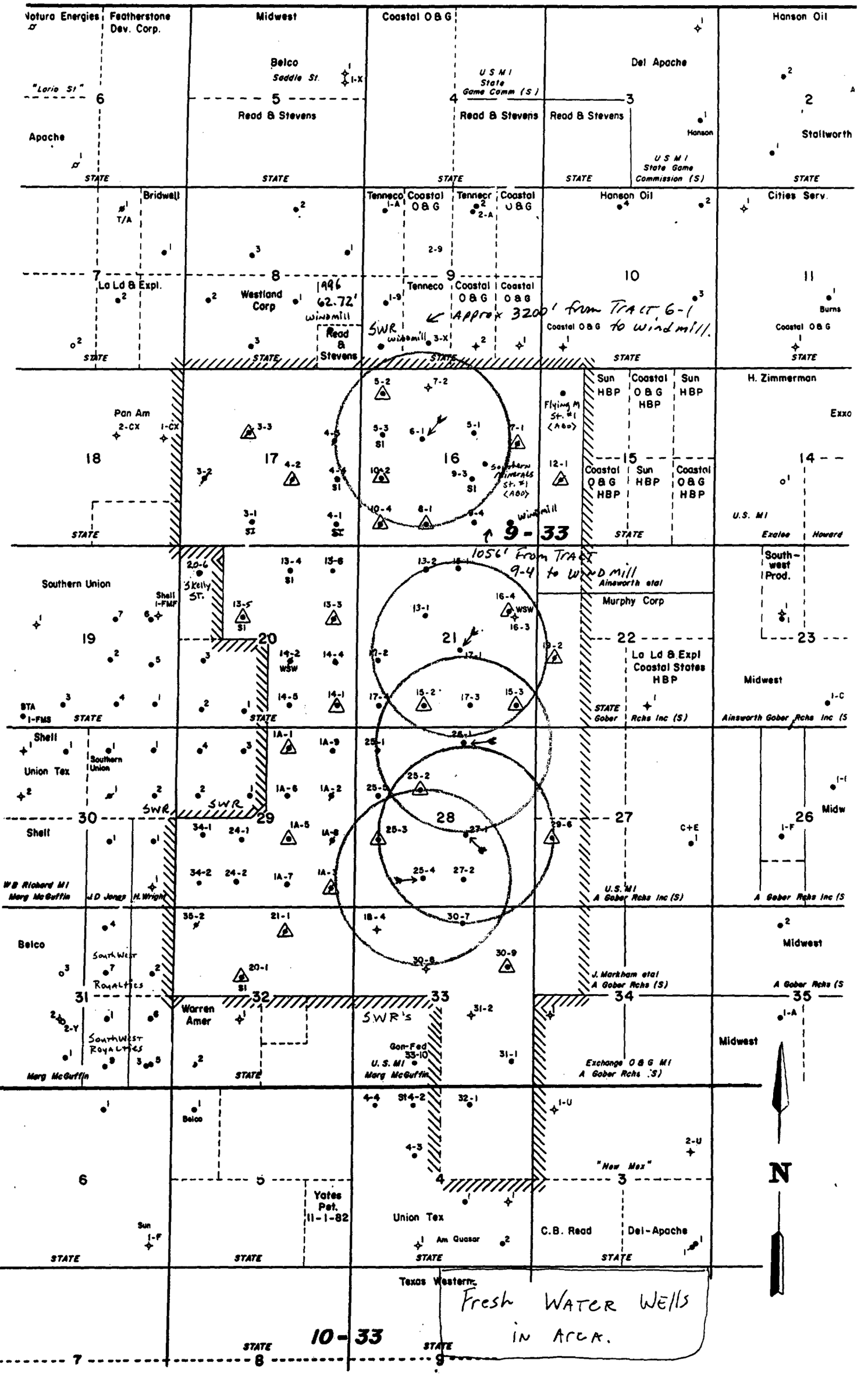
LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/03/97	12/02/97	12/02/97	12/02/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	0	302	90	5.5	2739	136
H3343-2	WATER WELL NW OF 6-1	63	59	29	4.3	929	132
H3343-3	W OF NW WATER WELL	95	38	13	3.9	785	156
Quality Control		NR	NR	NR	NR	1429	NR
True Value QC		NR	NR	NR	NR	1413	NR
% Accuracy		NR	NR	NR	NR	101	NR
Relative Percent Difference		NR	NR	NR	NR	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

		Cl^- (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/01/97	12/02/97	12/01/97	12/01/97	12/01/97	12/01/97
H3343-1	WATER WELL E OF 9-4	64	850	0	166	7.16	2399
H3343-2	WATER WELL NW OF 6-1	64	180	0	161	7.27	620
H3343-3	W OF NW WATER WELL	40	142	0	190	7.00	482
Quality Control		500	101	NR	NR	6.99	NR
True Value QC		500	100	NR	NR	7.00	NR
% Accuracy		100	101	NR	NR	100	NR
Relative Percent Difference		4.0	1.0	NR	NR	0.1	0.3
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

Date 12/03/97

H3343.XLS


Notura Energies
Featherstone Dev. Corp.
Midwest
Coastal O&G
Hanson Oil
"Lorio St"
Belco
Saddle St.
1-X
U S M I State Game Comm (S)
Del Apache
Hanson
Stallworth
Apache
Read & Stevens
STATE
U S M I State Game Commission (S)
Bridwell
T/A
Tenneco
Coastal O&G
Cities Serv.
La Ld & Expl.
Westland Corp
1996
62.72'
windmill
Read & Stevens
SWR
windmill
Approx 3200' from TRACT 6-1 to windmill.
Burns
Pan Am
2-CX
1-CX
Flying M St. #1 (Aso)
Sun HBP
Coastal O&G HBP
H. Zimmerman
Exxo
Southern Minerals St. #1 (Aso)
9-33
1056' From TRACT 9-4 to WINDMILL
U.S. MI
Exxlee
Howard
Southern Union
Shell 1-FMF
Kelly St.
Ainsworth etal
Murphy Corp
Southwest Prod.
La Ld & Expl Coastal States HBP
Midwest
STATE Gober Rchs Inc (S)
Ainsworth Gober Rchs Inc (S
Shell
Union Tex
Southern Union
SWR
Midw
Shell
W B Richard MI Marg McGuffin
J.D Jones
H. Wright
U.S. MI A Gober Rchs Inc (S)
A Gober Rchs Inc (S
Belco
South West Royalties
J. Markham etal A Gober Rchs (S)
A Gober Rchs (S
Warren Amer
SWR's
Gen-Fed 33-10
U.S. MI Marg McGuffin
Exchange O&G MI A Gober Rchs (S)
Midwest
SouthWest Royalties
Marg McGuffin
Belco
"New Mex"
Yates Pet. 11-1-82
Union Tex
Am Quasar
C.B. Read
Del-Apache
Sun
Texas Western
Fresh WATER WELLS IN AREA.
10-33
N

SOUTHWEST ROYALTIES, INC.
Southwest Royalties Building
407 N. Big Spring, Midland, TX. 79701-4326
P.O. Box 11390, Midland, TX. 79702-8390
(915) 686-9927, 1-800-433-7945

SOUTHWEST ROYALTIES
XIII.

FLYING M SA UNIT
APPLICATION FOR AUTHORIZATION TO INJECT

STATE OF NEW MEXICO
COMMISSIONER OF PUBLIC LANDS
ATTN: MR. POWELL
310 OLD SANTA FE TRAIL
SANTA FE, NM 87501

STATE LEASE
STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
PO BOX 1980
HOBBS, NM 88240

FEE LAND - SURFACE OWNER
DR. ANNETTE MARTIN
8516 STONE HARBOR
LAS VEGAS, NEVADA 89128

OFFSET OPERATORS
SDX
PO BOX 5061
MIDLAND, TX 79704

RW OIL COMPANY
BOX 1209
LOVINGTON, NM 88260

A COMPLETE COPY OF THE APPLICATION FOR AUTORIZATION TO INJECT PROJECT ON THE FLYING M LEASE WAS SENT BY CERTIFIED MAIL ON FEBRUARY 17, 1998, TO THE ABOVE.

Beverly Hatfield

BEVERLY HATFIELD
COMPLIANCE SPECIALIST

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NM 8750

A COMPLETE COPY OF THE APPLICATION FOR AUTORIZATION TO INJECT PROJECT ON THE FLYING M LEASE WAS SENT BY CERTIFIED MAIL ON FEBRUARY 19, 1998, TO THE ABOVE.

Beverly Hatfield

BEVERLY HATFIELD
COMPLIANCE SPECIALIST

PS Form 3800, April 1995

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to
RW OIL COMPANY
Street & Number
BOX 1209
Post Office, State, & ZIP Code
LOVINGTON, NM 88260

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

P 101 781 497

P 101 781 496

P 101 781 495

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to
SDX
Street & Number
PO BOX 5061
Post Office, State, & ZIP Code
MIDLAND, TX 79704

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

MIDLAND, TX DOWNTOWN STA. FEB 17 1998 USPS

P 101 781 493

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to
DR. ANNETTE MARTIN
Street & Number
8516 STONE HARBOR
Post Office, State, & ZIP Code
LAS VEGAS, NEVADA 89128

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

MIDLAND, TX DOWNTOWN STA. FEB 17 1998

P 101 781 491

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to
STATE OF NEW MEXICO
COMMISSIONER OF PUBLIC LANDS
ATTN: MR. POWELL
Street & Number
310 OLD SANTA FE TRAIL
Post Office, State, & ZIP Code
SANTA FE, NM 87501

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

MIDLAND, TX DOWNTOWN STA. FEB 17 1998

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to
STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
Street & Number
PO BOX 1980
Post Office, State, & ZIP Code
HOBBS, NM 88240

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

MIDLAND, TX DOWNTOWN STA. FEB 17 1998

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period.

of 1

_____ weeks.

Beginning with the issue dated

February 11 1998

and ending with the issue dated

February 11 1998

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 11th day of

February 1998

Jodi Henson

Notary Public.

My Commission expires
October 18, 2000
(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

LEGAL NOTICE
February 11, 1998

Southwest Royalties, Inc. intends to convert to water injection (5) wells within the Flying "M" (SA) Unit. The wells involved are as follows:

Flying "M" (SA) Unit Tract 6 well #1, located 2121' FNL & 1839' FWL of Section 16, T-9-S, R-33-E, Unit Letter "F", in Lea County, New Mexico. Injection will be to provide pressure maintenance in the San Andres formation from 4484' - 4540' at a maximum rate and pressure of 1200 BWPD and 2100 psi.

Flying "M" (SA) Unit Tract 17 well #1, located 2310' FEL & 2307' FSL of Section 21, T-9-S, R-33-E, Unit Letter "J", in Lea County, New Mexico. Injection will be to provide pressure maintenance in the San Andres formation from 4476' - 4515' at a maximum rate and pressure of 1200 BWPD and 2100 psi.

Flying "M" (SA) Unit Tract 26 well #1, located 520' FNL & 2120' FEL of Section 28, T-9-S, R-33-E, Unit Letter "B", in Lea County, New Mexico. Injection will be to provide pressure maintenance in the San Andres formation from 4492' - 4521' at a maximum rate and pressure of 1200 BWPD and 2100 psi.

Flying "M" (SA) Unit Tract 27 well #1, located 2120' FSL & 2120' FEL of Section 28, T-9-S, R-33-E, Unit Letter "J", in Lea County, New Mexico. Injection will be to provide pressure maintenance in the San Andres formation from 4498' - 4530' at a maximum rate and pressure of 1200 BWPD and 2100 psi.

Flying "M" (SA) Unit Tract 25 well #4, located 849.6' FSL & 1987' FWL of Section 28, T-9-S, R-33-E, Unit Letter "M", in Lea County, New Mexico. Injection will be to provide pressure maintenance in the San Andres formation from 4476' - 4522' at a maximum rate and pressure of 1200 BWPD and 2100 psi.

Interested parties must file objections or requests for hearings within 15 days to the following:

Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

If you have any questions concerning this application, please contact the following:

Southwest Royalties, Inc.
P.O. Drawer 11390
Midland, Texas 79702
ATTENTION: Nelson Patton
(915) 686-9927

#15702

01101469000 01517092

Southwest Royalties, Inc.
P.O. Box 11390
a/c# 476043
Midland, TX 79702

3/10/98

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

4/3/98

GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

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

RE: Proposed:
MC
DHC
NSL
NSP
SWD
WFX X
PMX

Gentlemen:

I have examined the application for the:

Southwest Royalties Inc

Operator	Lease & Well No.	Unit	S-T-R	
Flying M SA Unit	#61-F		16-09-33	Api #30-025-20807
Flying M SA Unit	#171-J		21-09-33	Api #30-025-20642
Flying M SA Unit	#271-J		28-09-33	Api #30-025-22034
Flying M SA Unit	#261-B		28-09-33	Api #30-025-21754
Flying M SA Unit	#254-N		28-09-33	API #30-025-22138

and my recommendations are as follows:

Many

Yours very truly,

Chris Williams

Chris Williams
Supervisor, District 1

/ed