

WFX 7/3/91  
720

JUL 18 1991

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: Manzano Oil Corporation  
Address: P.O. Box 2107, Roswell, NM 88202-2107  
Contact party: David Sweeney Phone: (505) 623-1996
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project?  yes  no  
If yes, give the Division order number authorizing the project R-9895.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- \* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
  1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- \* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification

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

Name: David Sweeney Title Drlg & Prod Superintendent  
Signature: David Sweeney Date: 6/17/97

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

## III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

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

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

C-108  
Application for Authorization to Inject  
Manzano Oil Corporation  
Lea County, New Mexico

Existing Producing Well  
Benson Shugart Waterflood Unit Well #8  
Unit A, Sec 35, T18S, R30E

- I. The purpose of this application is to request authorization to inject into the Penrose and Grayburg formation on the above mentioned well.
- II. Operator: Manzano Oil Corporation  
P.O. Box 2107  
Roswell, NM 88202-2107  
David Sweeney (505) 623-1996
- III. Well Data: See Exhibit A.
- IV. This is an expansion of the Benson Shugart Waterflood Unit case No. 10686, Order No. R-9895.
- V. See attached map. Exhibit B.
- VI. See Exhibit C.
- VII.
  1. Proposed average daily injection volume, approximately 400 BWPD per injection well in the Penrose and Grayburg formation. Maximum daily injection volume for the Penrose and Grayburg formation approximately 600 BWPD per injection well.
  2. This will be a closed system.
  3. A step rate test will be run on the Penrose and Grayburg formation. Proposed maximum injection pressure 2000 psi.
  4. The source for the injection water, will be from the Double Eagle water system, along with produced water from the producing wells within the Benson Shugart Waterflood Unit. See Exhibit D for analysis on water and compatability with a producing well.
  5. Not applicable.
- VIII. This information was previously submitted on Form C-108 February 18, 1993 under Hanson Operating Co., Inc.
- IX. The proposed injection interval in the BSWU Well #8 Penrose and Middle Grayburg, are open and producing and should not require stimulation at this time. If it is needed, 2000-3000 gal of acid should be sufficient and a small sand water frac.
- X. Logs have been submitted.
- XI. This information was previously submitted on Form C-108 February 18, 1993 under Hanson Operating Co., Inc.
- XII. All relevant data available was examined to determine if any open faults or any other hydrologic connection between the injection zones and any underground source of drinking water existed and it was determined that these geologic or engineering conditions do not exist in the flood area.

C-108  
Application for Authorization to Inject  
Manzano Oil Corporation  
Lea County, New Mexico

Existing Producing Well  
Benson Shugart Waterflood Unit Well #8  
Unit A, Sec 35, T18S, R30E

(The purpose of this application is to request authorization to inject into the Penrose and Grayburg formation on the above mentioned well.)

XIII. Proof of Notice:

1. Certified letters sent to the surface owner and offset operators are attached as Exhibit E.
2. Copy of legal advertisement attached as Exhibit F.

XIV. Certification is signed.

Offset Operators:

Mr. Ray Westall  
P.O. Box 4  
Loco Hills, NM 88255

J&G Enterprises  
P.O. Box 100  
Artesia, NM 88211-0100

LaRue & Muncy  
P.O. Box 196  
Artesia, NM 88211-0196

Yates Petroleum Corporation  
105 South Fourth Street  
Artesia, NM 88210

Casa Petroleum  
P.O. Box 4  
Loco Hills, NM 88255

Land Owner:

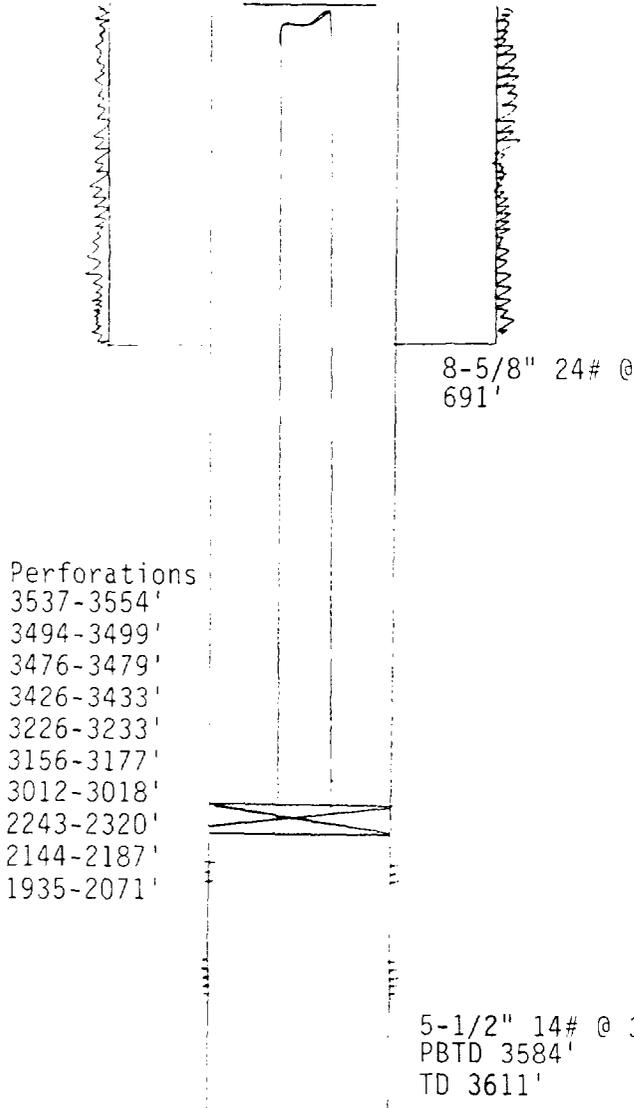
Richardson Cattle Co.  
P.O. Box 487  
Carlsbad, NM 88222

INJECTION WELL DATA SHEET

Manzano Oil Corporation OPERATOR Benson Shugart Waterflood Unit LEASE  
 8 WELL NO. 330' FNL & 990' FEL FOOTAGE LOCATION 35 SECTION 18 South TOWNSHIP 30 East RANGE

Schematic

Tabular Data



Perforations  
 3537-3554'  
 3494-3499'  
 3476-3479'  
 3426-3433'  
 3226-3233'  
 3156-3177'  
 3012-3018'  
 2243-2320'  
 2144-2187'  
 1935-2071'

Surface Casing  
 Size 8-5/8" " Cemented with 275 sx.  
 TOC Surface feet determined by circ 45 sks  
 Hole size 11"  
 Intermediate Casing  
 Size \_\_\_\_\_ " Cemented with \_\_\_\_\_ sx.  
 TOC \_\_\_\_\_ feet determined by \_\_\_\_\_  
 Hole size \_\_\_\_\_  
 Long string  
 Size 5-1/2 " Cemented with 895 sx.  
 TOC Surface feet determined by circ 105 sks  
 Hole size 7-7/8"  
 Total depth 3611'  
 Injection interval  
3226 feet to 3233 feet  
 (perforated ~~at 3226-3233' & 3537-3554'~~)  
 3537 feet to 3554 feet (perforated)  
 3512 feet to 3516 feet (need to open)

5-1/2" 14# @ 3611'  
 PBTD 3584'  
 TD 3611'

Squeeze all perforations that are open except 3226-3233' & 3537-3554'.  
 Propose to open 3512-3516'.  
 Drill out CIBP @ 3460'.

Spud 11/29/79  
 TD 12/09/79  
 Completion 2/14/80

Tubing size 2-3/8" lined with plastic set in a  
 (material)  
Baker Model AD-1 packer at 3180'+ feet  
 (brand and model)  
 (or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Penrose, Grayburg
- Name of Field or Pool (if applicable) Shugart-Yates-Seven-Rivers-Queen-Grayburg
- Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? Developmental oil well.
- Has the well ever been perforated in any other zone(s)? list all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) (3557-3554) (3494-3499) (3476-3479) (3426-3433) (3226-3233) (3156-3177) (2243-2320) (2144-2187) (1935-2071)
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Overlying - Yates; Underlying - Grayburg.



# RETRIEVABLE PACKER SYSTEMS



## MODEL "AD-1"™ TENSION PACKER

Product No. 739-08

The "AD-1" Tension Packer is a compact, economical, retrievable packer. Primarily used in waterflood applications, this packer can also be used for production and/or treating operations. It is used where a set-down packer is impractical. Since the "AD-1" is tension set, it is ideally suited for shallow wells where set-down weight is not available.

### FEATURES/BENEFITS

- Utilizes Baker's rugged rocker-type slips.
- Bore through the packer mandrel is larger than drift.
- Simple, low-cost packer for fluid injection.
- Three release methods insure retrievability.
- Uses proven one-piece packing element.

### ACCESSORIES

Model "C-1"™ Tandem Tension™ Packer, (Prod. No. 602-26)  
 Cup-Type Packer with Unloader, (Prod. Nos. 602-30 & 675-07)  
 Unloading Subs, (Prod. No. 675-10)

## MODEL "ADL-1"™ LARGE-BORE TENSION PACKER

Product No. 739-12

The "ADL-1" Tension Packer is a large-bore version of the Model "AD-1." The packer offers the same features and benefits as the Model "AD-1" and running and retrieving operations are the same.

### TO SET PACKER:

Run packer to desired setting depth, making the last movement downward. Rotate the tubing to the left one-quarter turn at the tool. Then, pick up and pack-off.

### TO RETRIEVE PACKER:

Lower the tubing at least one foot (0,31 m) more than is needed to remove applied tension so that the J-pin will move fully to the top of the J-slot.

Rotate the tubing to the right one-quarter turn at the packer so slips will now be in the running position. Packer can be moved to a new position and reset or it can be retrieved.

### TO SHEAR RELEASE PACKER:

As an alternate release method, the Tension Packer has shear rings designed to part at tensions varying from 13,000-100,000 lb (5,89 - 45,35 t). The cone, packing element and guide drop down and are carried out of hole by the bottom sub.

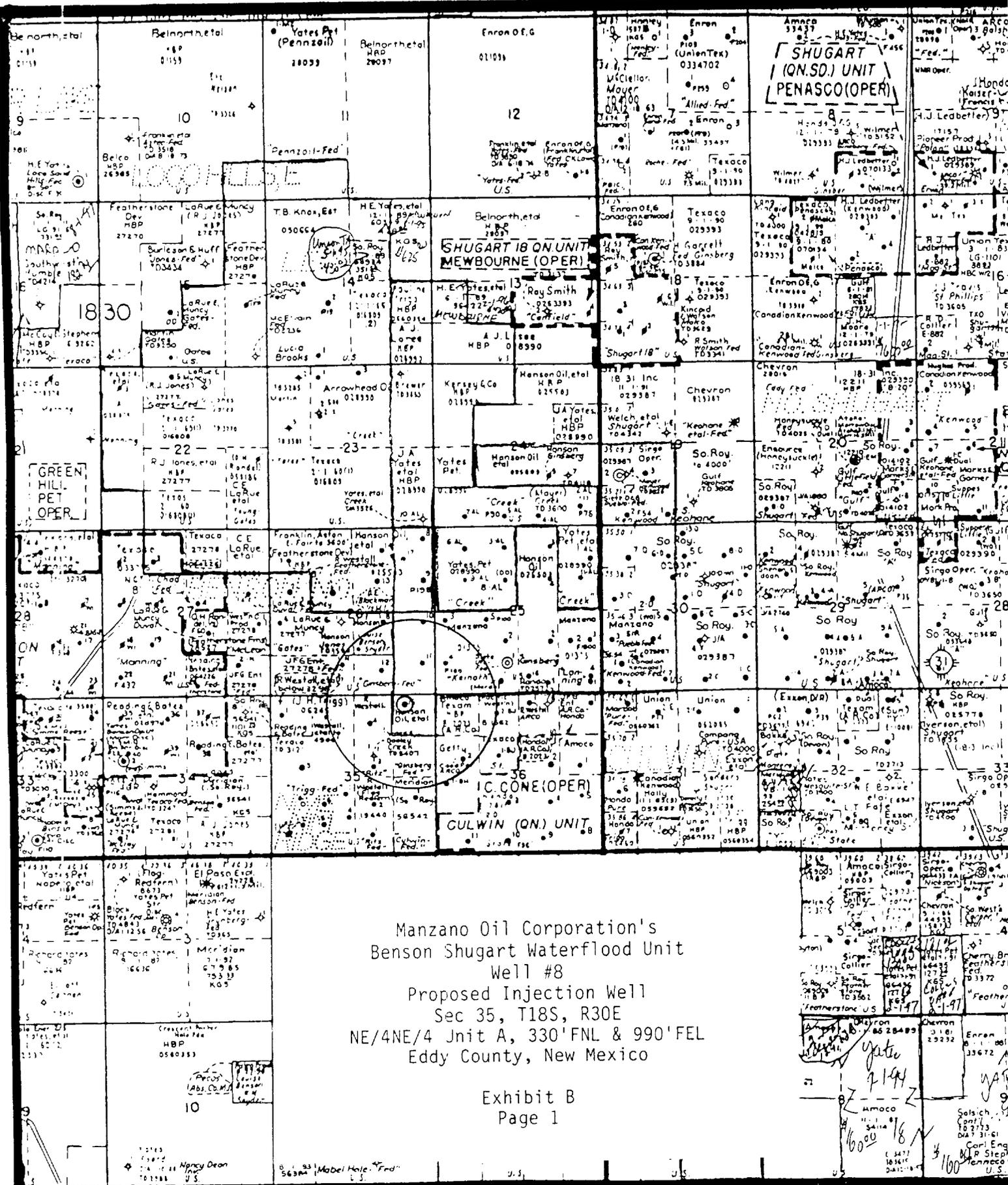
### TO RELEASE IN EMERGENCY:

Left-hand square threads on the top sub of the packer allow the tubing to be retrieved when the packer will not otherwise release.

REQUIRED UPSTRAIN TO SET PACKER		
Packer Size	Upstrain	
	Lb	Kg
41	2,000	907
43 & 45	5,000	2268
47	7,500	3402
49-55	15,000	6804

ORDERING EXAMPLE:  
 PRODUCT NO. 739-08  
 SIZE: 45M (5-1/2" OD 15.5-20 lb/M Casing)  
 MODEL "AD-1" TENSION PACKER w/2-3/8" OD EU  
 0 RD Box U-55, 4.7 lb/M Tubing x 2-3/8" OD  
 NU 10 RD Pin U-55 4.6 lb/M Tubing.

ORDERING EXAMPLE:  
 PRODUCT NO. 739-12  
 SIZE: 45B x 2.90 (5-1/2" OD 13-17 lb/M Casing)  
 MODEL "ADL-1" LARGE-BORE TENSION  
 PACKER w/3-1/2" OD EU & RD Box x Pin U-55  
 9.3 lb/M Tubing.



Manzano Oil Corporation's  
 Benson Shugart Waterflood Unit  
 Well #8  
 Proposed Injection Well  
 Sec 35, T18S, R30E  
 NE/4NE/4 Jnit A, 330'FNL & 990'FEL  
 Eddy County, New Mexico

Exhibit B  
 Page 1

Yates  
 7194  
 6000 18  
 Amoco  
 1847  
 1846  
 1845

Manzano Oil Corporation  
 Benson Shugart Waterflood #8  
 Well Data Information  
 Exhibit C - Page 1

<u>Well Name</u>	<u>Operator</u>	<u>Type</u>	<u>Spud</u> <u>Reentry</u>	<u>Completion</u>	<u>Total</u> <u>Depth</u>	<u>Producing</u> <u>Zone</u>	<u>Perforations</u>	<u>Completion Information</u>	<u>Other</u> <u>Comments</u>
Arco #2 E, Sec 36, T18S, R30E SW/4NW/4	Ray Westall	Oil	9/18/84	10/07/84	3950'	7-Rivers Penrose Grayburg	2412-18' 2464-2470' 3152-66' 3232-38' 3286-94'	8-5/8" 23# @ 761' w/364 sks (circl 15 sks) 5-1/2" 17# @ 3950' w/300 sks (TOC 2750' calc)	Rotary
Ritz #3 G, Sec 35, T18S, R30E SW/4NE/4	Ray Westall	Oil	9/21/84	10/01/84	4000'	Queen Grayburg	3078-3213' 3844-74'	8-5/8" 23# @ 485' w/280 sks (circl 10 sks) 5-1/2" 17# @ 4000' w/1980 sks Circulated to surface	Rotary
Ritz #4 B, Sec 35, T18S, R30E NW/4NE/4	Ray Westall	Oil	1/01/85	4/01/85	3988'	Penrose	3314-42'	8-5/8" 23# @ 521' w/300 sks (circl 40 sks) 5-1/2" 17# @ 3972' 300 sks (TOC 2700 calculated)	



N. M. O. C. C. CORY

*Cory*

NOTED  
JUL 5 - 1962  
HANSON

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Geological Survey  
P. O. Drawer U  
Artesia, New Mexico

Mr. Ernest A. Hanson  
P.O. Box 1515  
Roswell, N.M.

July 3, 1962  
**RECEIVED**

JUL 6 1962

U. S. GEOLOGICAL SURVEY

ARTESIA, NEW MEXICO

Re: Oil and Gas Lease  
NM 025503/

Gentlemen:

We have not yet received the reports checked below pertaining to your well No. 3-Ginsberg located in SW 1/4 NE 1/4 sec. 35, T. 18 S., R. 30 E., Eddy County, New Mexico:

Sundry Notice Form 9-331a, "Report of Setting and/or Cementing \_\_\_\_\_ Casing".  
(3 copies) \_\_\_\_\_

Sundry Notice Form 9-331a, "Subsequent Report of Treating Well".  
(3 copies) \_\_\_\_\_

Sundry Notice Form 9-331a, "Subsequent Report of Workover or Drill Deeper".  
(5 copies) X

Form 9-330, "Log of Oil or Gas Well" covering all drilling operations.  
(4 copies) \_\_\_\_\_

Geologic logs (30 CFR 221.59 requires that duplicate copies of all electrical logs, sample logs, drilling time logs, temperature, deviation, and other well surveys must be filed.)  
(2 copies) \_\_\_\_\_

Sundry Notice Form 9-331a "Subsequent Report of Abandonment" or Subsequent Report of Temporary Abandonment".  
(5 copies) \_\_\_\_\_

Please submit these delinquent reports to this office at your earliest convenience.

NOTED  
JUL 9 1962  
KNAUF

U. S. Geological Survey

*Roswell 7-5-62*

*memo for Mr. Jim Knauff*

*We have performed no work of any kind on the well which was drilled by...*

Form 9-881a  
(Feb. 1961)

N. M. O. C. C. COPY

Budget Bureau No. 42-R358.4  
Approval expires 12-31-60.

Land Office Santa Fe, N.M.

Lease No. N.M. 025503

Unit \_\_\_\_\_

(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

RECEIVE

APPROVED  
NOV 27 1961  
Ronnie E. Shock  
ACTING DISTRICT ENGINEER

NOV 30 1961

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	X	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	ARTESIA OFFICE
NOTICE OF INTENTION TO CHANGE PLANS.....		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....		SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....		SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....		SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 15, 1961

#3 Ginsberg Federal

Well No. \_\_\_\_\_ is located 1980 ft. from  $\left\{ \begin{matrix} N \\ S \end{matrix} \right\}$  line and 1980 ft. from  $\left\{ \begin{matrix} E \\ W \end{matrix} \right\}$  line of sec. 35

C SW 1/4 NE 1/4 Sec. 35 T. 18 S., R. 30 E. N.M.P.M.

~~Wilcox~~ Eddy New Mexico  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 3420 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work.)

It is proposed to re-enter the old hole formerly known as the Yates & Dooley - #1 Creek to a total depth of 3200' with cable tools in order to test the Queen Formation. The following casing and cementing program is proposed:

- 7" @ 750' w/50 sx. (Top of Salt @ 700')
- 4-1/2" @ 3200' w/150 sx. (Cmt. back to Base of Salt)

Heavy mud to be circulated ahead of cement.

RECEIVED  
NOV 17 1961  
U. S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Ernest A. Hanson

Address P. O. Box 1515

Roswell, New Mexico

By Raymond J. Johnson

Title Geologist

NEW MEXICO OIL CONSERVATION COMMISSION  
 WELL LOCATION AND ACREAGE DEDICATION PLAT

FORM C-128  
 Revised 5/1/57

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

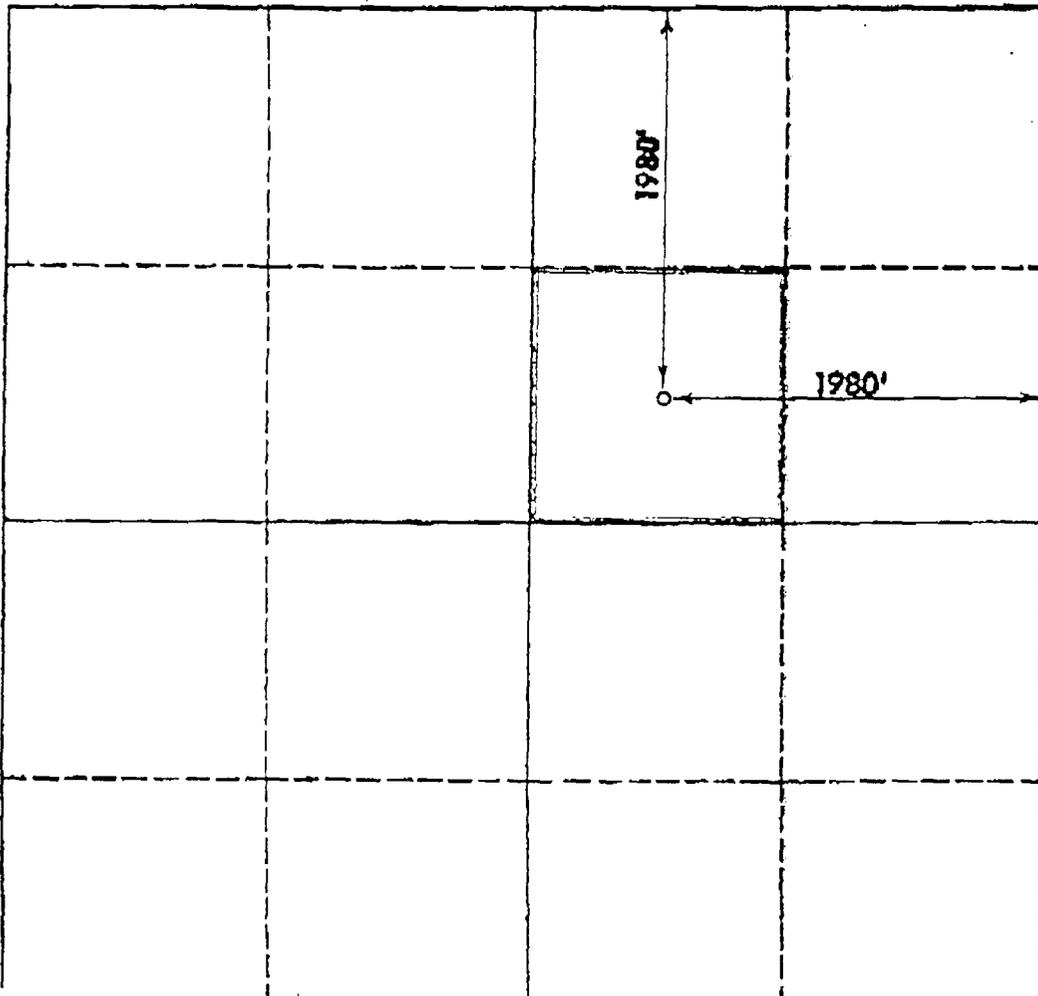
SECTION A

Operator <b>Ernest A. Hanson</b>		Lease <b>Ginsberg Federal</b>		Well No. <b>3</b>
Unit Letter <b>G</b>	Section <b>35</b>	Township <b>T. 18 S.</b>	Range <b>R. 30 E.</b>	County <b>Eddy</b>
Actual Footage Location of Well: <b>1980</b> feet from the <b>North</b> line and <b>1980</b> feet from the <b>East</b> line				
Ground Level Elev. <b>3418</b>	Producing Formation <b>Yates</b>	Pool <b>Without Underflow</b>	Dedicated Acreage: <b>40</b> Acres	

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES  NO  ("Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.)
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communization agreement or otherwise? YES  NO . If answer is "yes," Type of Consolidation \_\_\_\_\_
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

SECTION B



CERTIFICATION

I hereby certify that the information in SECTION A above is true and complete to the best of my knowledge and belief.

Name <i>Ernest A. Hanson</i>
Position <b>Geologist</b>
Company <b>Ernest A. Hanson</b>
Date <b>Nov. 20, 1961</b>

I hereby certify that the well location shown on the plat in SECTION B was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed <b>Nov. 17, 1961</b>
Registered Professional Engineer and/or Land Surveyor <i>[Signature]</i>



SCALE PROGRAM FOR MIXING 2 WATERS

MANZANO OIL CO. LP  
 DOUBLE EAGLE CITY (NEW MEXICO)  
 BSWU Well #11

TEMPERATURE (F) = 70.0

ION	CONCENTRATION (MG/L)	
	WATER NO. 1 (DOUBLE EAGLE)	WATER NO. 2 (BSWU #11)
SODIUM	187.	44827.
CALCIUM	120.	6954.
MAGNESIUM	19.	1998.
CHLORIDE	426.	86000.
BICARBONATE	195.	427.
CARBONATE	0.	0.
SULFATE	25.	1400.
PH	7.20	7.10
SPECIFIC GRAVITY	1.0000	1.0990
RESISTIVITY	-1.00	0.06
IONIC STRENGTH	0.0198	2.7324
TDS	973.	141606.

TYPE OF SCALE	SOLUBILITY (PTB)	SCALE INDEX	SCALE (PTB)	SCALING TENDENCY
100.0 % WATER NO. 1	0.0 % WATER NO. 2			
CALCIUM SULFATE	675.	-2.30	-659.	NONE
CALCIUM CARBONATE	94.	0.09	11.	SLIGHT
90.0 % WATER NO. 1	10.0 % WATER NO. 2			
CALCIUM SULFATE	1117.	-1.30	-1015.	NONE
CALCIUM CARBONATE	106.	0.08	19.	SLIGHT
80.0 % WATER NO. 1	20.0 % WATER NO. 2			
CALCIUM SULFATE	1268.	-1.00	-1080.	NONE
CALCIUM CARBONATE	113.	0.10	25.	SLIGHT
70.0 % WATER NO. 1	30.0 % WATER NO. 2			
CALCIUM SULFATE	1327.	-0.81	-1053.	NONE
CALCIUM CARBONATE	108.	0.16	44.	SLIGHT

NOTE: PTB = POUNDS PER THOUSAND BARRELS

MANZANO OIL Corp  
 Bogie Santa "City of Carlsbad"  
 B5WU Well #11

TYPE OF SCALE	SOLUBILITY (PTB)	SCALE INDEX	SCALE (PTB)	SCALING TENDENCY
60.0 % WATER NO. 1	40.0 % WATER NO. 2			
CALCIUM SULFATE	1337.	-0.66	-976.	NONE
CALCIUM CARBONATE	96.	0.25	69.	SLIGHT
50.0 % WATER NO. 1	50.0 % WATER NO. 2			
CALCIUM SULFATE	1321.	-0.54	-874.	NONE
CALCIUM CARBONATE	83.	0.35	96.	SLIGHT
40.0 % WATER NO. 1	60.0 % WATER NO. 2			
CALCIUM SULFATE	1285.	-0.43	-752.	NONE
CALCIUM CARBONATE	67.	0.47	125.	MODERATE
30.0 % WATER NO. 1	70.0 % WATER NO. 2			
CALCIUM SULFATE	1237.	-0.34	-617.	NONE
CALCIUM CARBONATE	53.	0.60	152.	MODERATE
20.0 % WATER NO. 1	80.0 % WATER NO. 2			
CALCIUM SULFATE	1179.	-0.25	-473.	NONE
CALCIUM CARBONATE	41.	0.74	177.	MODERATE
10.0 % WATER NO. 1	90.0 % WATER NO. 2			
CALCIUM SULFATE	1115.	-0.16	-323.	NONE
CALCIUM CARBONATE	32.	0.88	200.	MODERATE
0.0 % WATER NO. 1	100.0 % WATER NO. 2			
CALCIUM SULFATE	1047.	-0.08	-168.	NONE
CALCIUM CARBONATE	24.	1.03	221.	MODERATE

NOTE: PTB = POUNDS PER THOUSAND BARRELS

P 382 741 495

US Postal Service

### Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>Ray Westall</i>	
Street & Number <i>P.O. Box 4</i>	
Post Office, State, & ZIP Code <i>Doon Mills, NH 08855</i>	
Postage	\$ 1.01
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.46</b>
Postmark or Date	

PS Form 3800, April 1995

BSWU SUDS #8

P 382 741 471

US Postal Service

### Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>John &amp; Mary</i>	
Street & Number <i>P.O. Box 196</i>	
Post Office, State, & ZIP Code <i>Artesia, NM 88211-0196</i>	
Postage	\$ 1.01
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.01
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.46</b>
Postmark or Date	

PS Form 3800, April 1995

BSWU SUDS #8

P 382 741 492

US Postal Service

### Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>Bob Enterprises</i>	
Street & Number <i>P.O. Box 100</i>	
Post Office, State, & ZIP Code <i>Artesia, NM 88211-0100</i>	
Postage	\$ 1.01
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.46</b>
Postmark or Date	

PS Form 3800, April 1995

BSWU SUDS #8

P 382 741 490

US Postal Service

### Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>John Pot.</i>	
Street & Number <i>105 S 4th St.</i>	
Post Office, State, & ZIP Code <i>Artesia, NM 88210</i>	
Postage	\$ 1.01
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$ 3.46</b>
Postmark or Date	

PS Form 3800, April 1995

BSWU SUDS #8

P 382 741 489

US Postal Service

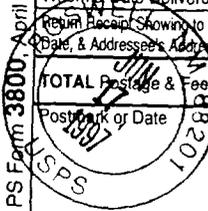
**Receipt for Certified Mail**

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>Car Petroleum</i>	
Street & Number <i>P.O. Box 4</i>	
Post Office, State, & ZIP Code <i>Locust Hill, NM 88255</i>	
Postage	\$ <i>1.01</i>
Certified Fee	<i>1.35</i>
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	<i>1.10</i>
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ <i>3.46</i>
Postmark or Date	

PS Form 3800, April 1995



RSUUC #8

P ~~382 741 488~~

US Postal Service

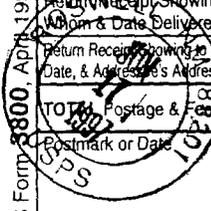
**Receipt for Certified Mail**

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to <i>Richardson Cattle Co.</i>	
Street & Number <i>P.O. Box 487</i>	
Post Office, State, & ZIP Code <i>Carlsbad, NM 88222</i>	
Postage	\$ <i>1.01</i>
Certified Fee	<i>1.35</i>
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	<i>1.10</i>
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ <i>3.46</i>
Postmark or Date	

PS Form 3800, April 1995



RSUUC #9



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Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 16, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Ray Westall  
P.O. Box 4  
Loco Hills, NM 88255

Re: Benson Shugart Waterflood Unit Well #8  
Lea County, New Mexico

Dear Mr. Westall:

In accordance with the requirements of the New Mexico Oil Conservation Division Form C-108 (Application for Authorization to Inject), please find attached a copy for Manzano Oil Corporation's, Benson Shugart Waterflood Unit Well #8, located in Section 35, T18S, R30E, Lea County, New Mexico.

If you have any questions, please feel free to contact me at 505/623-1996.

Very truly yours,

A handwritten signature in cursive script that reads "David Sweeney".

David Sweeney

DS:ah

Enclosure



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Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 16, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

J & G Enterprises  
P.O. Box 100  
Artesia, NM 88211-0100

Re: Benson Shugart Waterflood Unit Well #8  
Lea County, New Mexico

Gentlemen:

In accordance with the requirements of the New Mexico Oil Conservation Division Form C-108 (Application for Authorization to Inject), please find attached a copy for Manzano Oil Corporation's, Benson Shugart Waterflood Unit Well #8, located in Section 35, T18S, R30E, Lea County, New Mexico.

If you have any questions, please feel free to contact me at 505/623-1996.

Very truly yours,

A handwritten signature in cursive script that reads "David Sweeney".

David Sweeney

DS:ah

Enclosure



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Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 16, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

LaRue & Muncy  
P.O. Box 196  
Artesia, NM 88211-0196

Re: Benson Shugart Waterflood Unit Well #8  
Lea County, New Mexico

Gentlemen:

In accordance with the requirements of the New Mexico Oil Conservation Division Form C-108 (Application for Authorization to Inject), please find attached a copy for Manzano Oil Corporation's, Benson Shugart Waterflood Unit Well #8, located in Section 35, T18S, R30E, Lea County, New Mexico.

If you have any questions, please feel free to contact me at 505/623-1996.

Very truly yours,

A handwritten signature in cursive script that reads "David Sweeney".

David Sweeney

DS:ah

Enclosure



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Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 16, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Yates Petroleum Corporation  
105 South Fourth Street  
Artesia, NM 88210

Re: Benson Shugart Waterflood Unit Well #8  
Lea County, New Mexico

Gentlemen:

In accordance with the requirements of the New Mexico Oil Conservation Division Form C-108 (Application for Authorization to Inject), please find attached a copy for Manzano Oil Corporation's, Benson Shugart Waterflood Unit Well #8, located in Section 35, T18S, R30E, Lea County, New Mexico.

If you have any questions, please feel free to contact me at 505/623-1996.

Very truly yours,

David Sweeney

DS:ah

Enclosure



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Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 16, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Casa Petroleum  
P.O. Box 4  
Loco Hills, NM 88255

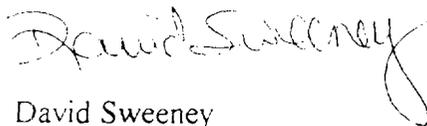
Re: Benson Shugart Waterflood Unit Well #8  
Lea County, New Mexico

Gentlemen:

In accordance with the requirements of the New Mexico Oil Conservation Division Form C-108 (Application for Authorization to Inject), please find attached a copy for Manzano Oil Corporation's, Benson Shugart Waterflood Unit Well #8, located in Section 35, T18S, R30E, Lea County, New Mexico.

If you have any questions, please feel free to contact me at 505/623-1996.

Very truly yours,

  
David Sweeney

DS:ah

Enclosure



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Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 16, 1997

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Richardson Cattle Company  
P.O. Box 487  
Carlsbad, NM 88222

Re: Benson Shugart Waterflood Unit Well #8  
Lea County, New Mexico

Gentlemen:

In accordance with the requirements of the New Mexico Oil Conservation Division Form C-108 (Application for Authorization to Inject), please find attached a copy for Manzano Oil Corporation's, Benson Shugart Waterflood Unit Well #8, located in Section 35, T18S, R30E, Lea County, New Mexico.

If you have any questions, please feel free to contact me at 505/623-1996.

Very truly yours,

David Sweeney

DS:ah

Enclosure

Manzano Oil Corporation, P. O. Box 2107, Roswell, New Mexico 88202-2107, has filed a Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking Administrative Approval to expand the existing Benson Shugart Waterflood Unit. This expansion includes converting an existing well (B.S.W.U well #8) from a producing oil well to an injection well located in the NE/4NE/4, 330' FNL & 990' FEL in Section 35, T18S, R30E, Eddy County, New Mexico and will be used for pressure maintenance. Produced water from the Seven Rivers, Penrose and Grayburg formations, along with make up water from the Double Eagle water system will be injected into the Grayburg formation at a depth of 3537' - 3554', and the Penrose formation at a depth of 3226' - 3233' with a maximum pressure of 2000 psi and a maximum rate of 600 BWPD. All interested parties opposing the aforementioned must file objections with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days. Additional information can be obtained by contacting David Sweeney at (505) 623-1996.

WFX-120



Manzano Oil Corporation

P.O. Box 2107  
Roswell, New Mexico 88202-2107  
(505) 623-1996  
FAX (505) 625-2620

June 24, 1997

Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

Re: Manzano Oil Corporation's  
B.S.W.U. #8  
330'FNL & 990'FEL  
Section 35, T18S, R30E  
Eddy County, New Mexico

Gentlemen:

Attached is the Affidavit of Publication from the Hobbs Daily News-Sun on the captioned. All other paperwork has been previously submitted.

If you have any questions, please do not hesitate to call.

Sincerely,

Allison Hernandez  
Engineering Technician

ah

Enclosure

# Affidavit of Publication

Copy of Publication

No. 15888

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of

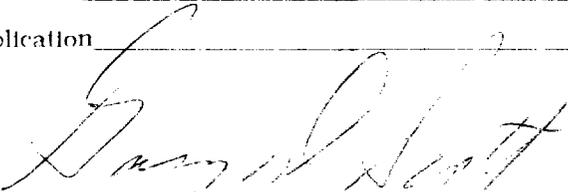
the state of New Mexico for 1 consecutive weeks on the same day as follows:

First Publication June 11, 1997

Second Publication \_\_\_\_\_

Third Publication \_\_\_\_\_

Fourth Publication \_\_\_\_\_



Subscribed and sworn to before me this 11th day of June 1997

Stephen R. ...  
Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1999

**LEGAL NOTICE**  
Manzano Oil Corporation, P.O.

Box 2107, Roswell, New Mexico 88202-2107, has filed a Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking Administrative Approval to expand the existing Benson Shugart Waterflood Unit. This expansion includes converting an existing well (B.S.W.U well #8) from a producing oil well to an injection well located in the NE/4NE/4, 330' FNL & 990' FEL in Section 35, T18S, R30E, Eddy County, New Mexico and will be used for pressure maintenance. Produced water from the Seven Rivers, Penrose and Grayburg formations, along with make up water from the Double Eagle water system will be injected into the Grayburg formation at a depth of 3537'-3554', and the Penrose formation at a depth of

3226'-3233' with a maximum pressure of 2000 psi and a maximum rate of 600 BWPD. All interested parties opposing the aforementioned must file objections with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days. Additional information can be obtained by contacting David Sweeney at (505) 623-1996. Published in the Artesia Daily Press, Artesia, N.M. June 11, 1997.

Legal 15888