

OIL CONSERVATION DIVISION
RECEIVED

APPLICATION FOR AUTHORIZATION TO INJECT

'92 NOV 17 9 AM 8 34

- I. PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? Yes No
- II. OPERATOR: TEXAS OPERATORS INC.
ADDRESS: P.O. Box 58 MIDLAND, TX 79702
CONTACT PARTY: JOE D. RAMEY PHONE: 271-1150
- 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 _____
- 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/1 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: JOE D. RAMEY TITLE: CONSULTANT
SIGNATURE: Joe D. Ramey DATE: 11/17/92
- * 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. _____

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.

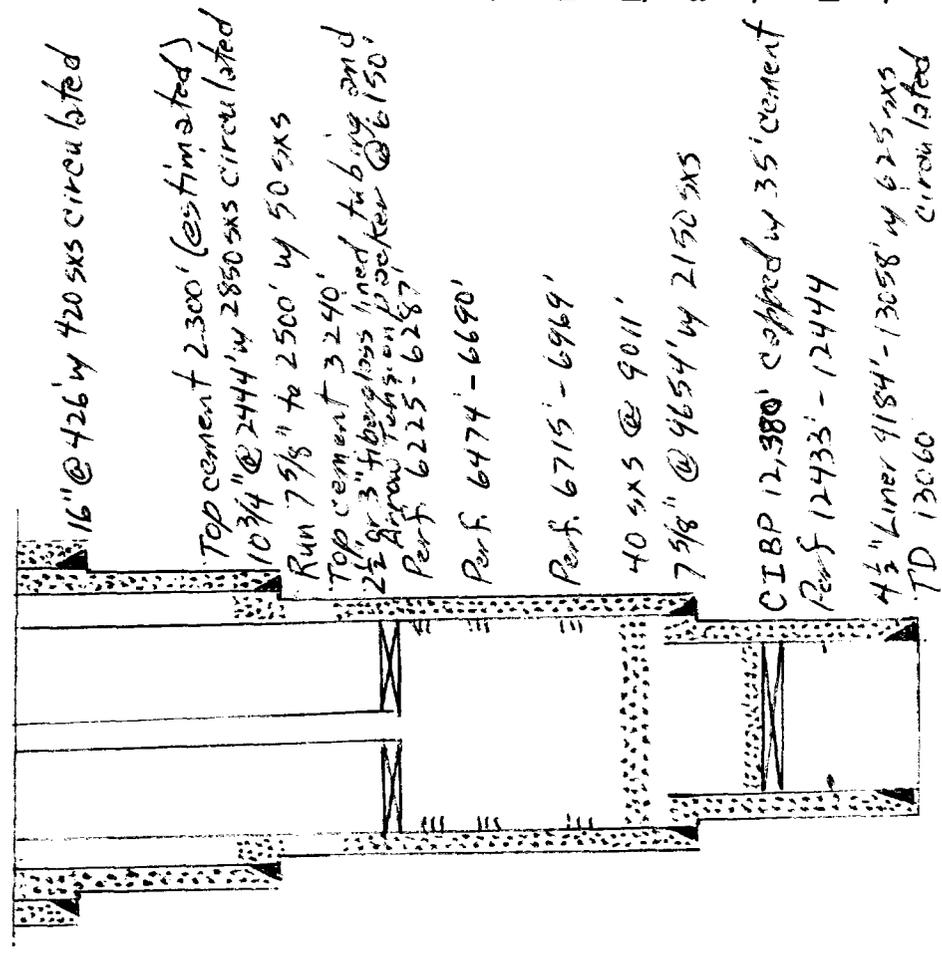
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 day: from the date this application was mailed to them.

INJECTION WELL DATA SHEET

OPERATOR TEXAS OPERATORS INC. LEASE SWD

WELL NO. 1 FOOTAGE LOCATION 1980' N & 660' W SECTION 32 TOWNSHIP 23S RANGE 28E

Schematic



Well Construction Data

Surface Casing
 Size 16 " Cemented with 420 sx.
 TOC Surface feet determined by circulated
 Hole Size 20 "

Intermediate Casing
 Size 10 3/4 " Cemented with 2850 sx.
 TOC Surface feet determined by circulated
 Hole Size 14 3/5 "

Long String
 Size 7 5/8 " Cemented with 2150 sx.
 TOC 3240 feet determined by Temperature Survey
 Hole Size 9 1/2 "

Total Depth 13060 (see attached sheet)

Injection Interval

6225 feet to 6969 feet
 (perforated ~~or not~~ here, indicate which)

INJECTION WELL DATA SHEET

Tubing Size 2 1/2" or larger lined with Fiberglass set in a
 (type of internal coating)
Arrow Tension packer at 6150' feet

Other type of tubing / casing seal if applicable _____

Other Data

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

If no, for what purpose was the well originally drilled? Oil & Gas Test

2. Name of the injection formation BOVE SPRINGS

3. Name of Field or Pool (if applicable) LOVING AREA

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. 12,433 - 12,444

CI BP @ 12380' capped w/ 35' cement, 40 SX cement plug b/c 9011'

5. Give the names and depths of any over or underlying oil or gas zones (pools) in this area.

DeWane -

Atoys -

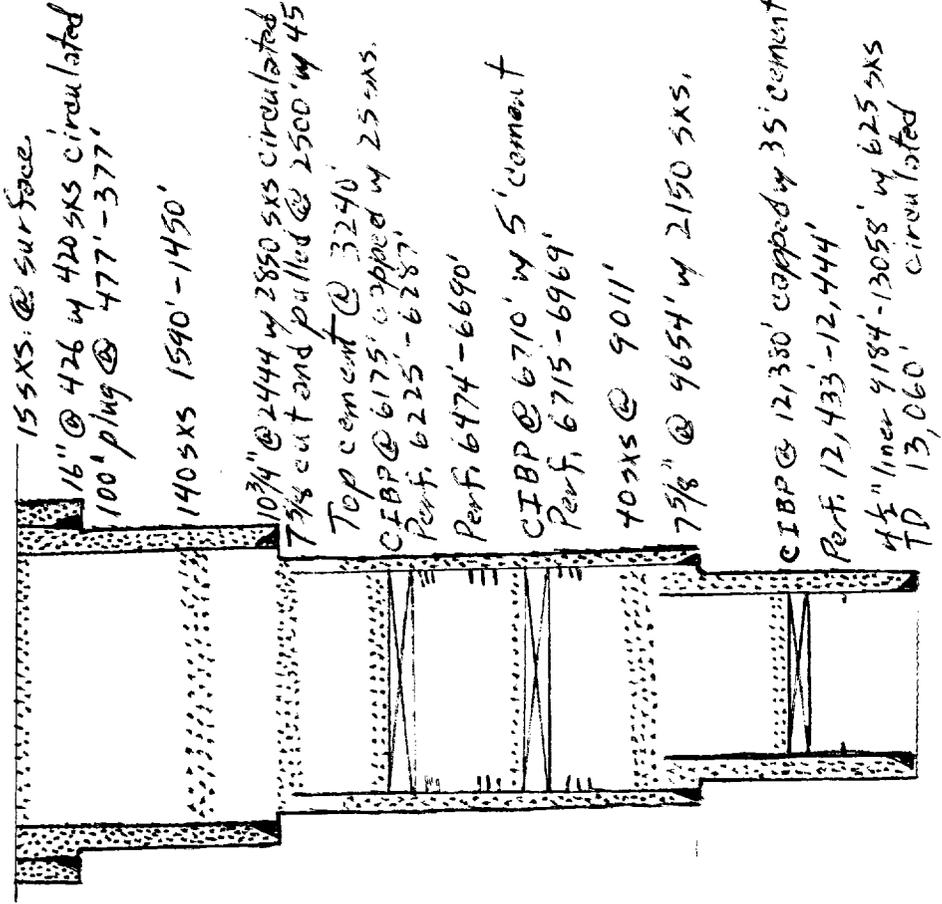
Arrow

INJECTION WELL DATA SHEET

OPERATOR TEXAS OPERATORS INC. LEASE SWD

WELL NO. 1 FOOTAGE LOCATION 1980'N + 660'W SECTION 32 TOWNSHIP 23S RANGE 28E

Schematic PRESENT CONDITION



Well Construction Data

~~Surface Casing~~ LINER 9184' to 13058'
 Size 4 1/2 " Cemented with 625 sx.
 TOC 9184 feet determined by circulated out top of liner.
 Hole Size 6 1/2 "

Intermediate Casing

Size " Cemented with " sx.
 TOC " feet determined by "

Long String

Size " Cemented with " sx.
 TOC " feet determined by "
 Hole Size "
 Total Depth "

Injection Interval

feet to _____ feet
 (perforated or open-hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size _____ lined with _____ (type of internal coating) _____ set in a
 _____ packer at _____ feet

Other type of tubing / casing seal if applicable _____

Other Data

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

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

2. Name of the injection formation _____

3. Name of Field or Pool (if applicable) _____

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

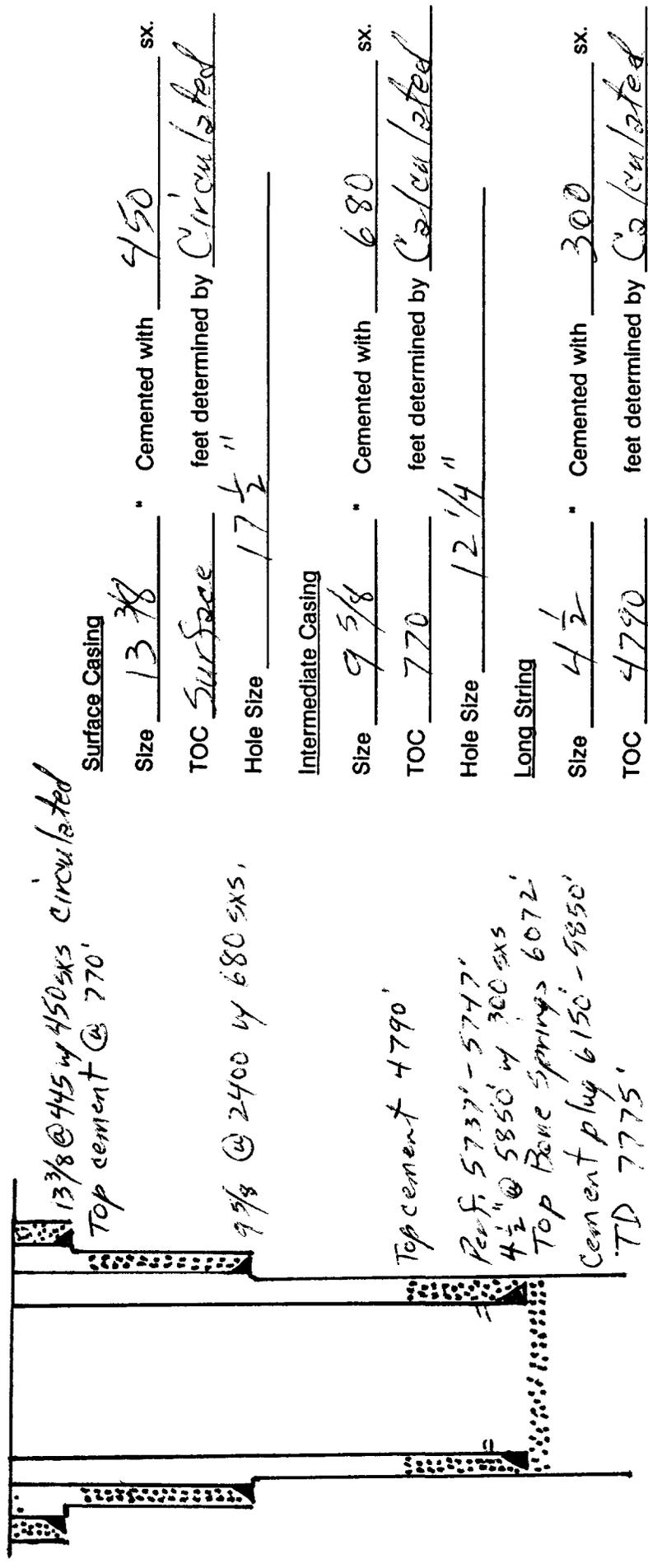
5. Give the names and depths of any over or underlying oil or gas zones (pools) in this area.

INJECTION WELL DATA SHEET

OPERATOR Cimarron Energy LEASE Watts Federal

WELL NO. 1 FOOTAGE LOCATION 990 North 660 East SECTION 31 TOWNSHIP 23S RANGE 28E

Schematic



Well Construction Data

Surface Casing
Size 13 3/8 " Cemented with 450 sx.

TOC Surface feet determined by Circulated
Hole Size 17 1/2 "

Intermediate Casing

Size 9 5/8 " Cemented with 680 sx.
TOC 770 feet determined by Calculated

Hole Size 12 1/4 "

Long String

Size 4 1/2 " Cemented with 300 sx.
TOC 4790 feet determined by Calculated

Hole Size 8 1/2 "

Total Depth 7775 '

Injection Interval

_____ feet to _____ feet
(perforated or open-hole; indicate which)

Delaware Formation Oil Producer

INJECTION WELL DATA SHEET

Tubing Size _____ lined with _____ (type of internal coating) set in a _____ packer at _____ feet

Other type of tubing / casing seal if applicable _____

Other Data

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

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

2. Name of the injection formation _____

3. Name of Field or Pool (if applicable) _____

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

5. Give the names and depths of any over or underlying oil or gas zones (pools) in this area.

TEJAS OPERATORS INC. SEEKS APPROVAL TO RE-ENTER THE PLUGGED AND ABANDONED AMOCO JB COM #1 LOCATED 1980 FEET NORTH AND 660 FEET WEST OF SECTION 32, TOWNSHIP 23S, RANGE 28E EDDY COUNTY, NEW MEXICO. THE SUBJECT WELL IS LOCATED ONE MILE WEST AND TWO MILES SOUTH OF LOVING, NEW MEXICO. TEJAS WILL CONVERT THE SUBJECT WELL INTO A COMMERCIAL SALT WATER DISPOSAL WELL AND WILL INJECT A MAXIMUM OF 3000 BARRELS OF PRODUCED WATER FROM WELLS PRODUCING IN THE DELAWARE, BONE SPRINGS, ATOKA AND MORROW IN THE AREA, INTO THE BONE SPRINGS FORMATION THROUGH SELECTED PERFORATIONS 6225' - 6969'. INITIAL INJECTION RATES ARE ANTICIPATED TO AVERAGE 1500 BARRELS PER DAY AT AN AVERAGE INJECTION PRESSURE OF 500 PSI WITH A MAXIMUM REQUESTED INJECTION PRESSURE OF 1295 PSI. THE SYSTEM WILL BE OPEN AND ANALYSIS OF THE INJECTION FLUID AND ANALYSIS OF THE FLUID IN THE INJECTION ZONE FROM NEARBY WELLS IS ATTACHED. COMPATIBILITY TESTS WILL BE CONDUCTED WHEN ACTUAL SAMPLES ARE COLLECTED.

THE SUBJECT WELL WAS DRILLED IN 1980 AS AN OIL AND GAS TEST AND WAS PLUGGED AND ABANDONED AFTER TESTING THE MORROW AND BONE SPRINGS. THE MORROW TESTED WATER WITH A SHOW OF GAS AND THE BONE SPRINGS WATER WITH A TRACE OF OIL AND GAS. SCHEMATICS OF THE WELL AS IT PRESENTLY EXISTS AND HOW IT WILL BE EQUIPPED AS A DISPOSAL WELL ARE ATTACHED. INJECTION WILL BE THROUGH 2 1/2 INCH OR LARGER, FIBERGLASS LINED TUBING SET IN AN ARROW TENSION PACKER TO BE SET AT APPROXIMATELY 6150 FEET. THE TUBING-CASING ANNULUS WILL BE FILLED WITH AN INERT PACKER FLUID.

THE BONE SPRINGS IN THE WELL IS TOPPED AT 6080 FEET AND IS AROUND 3300 FEET THICK. IT IS COMPOSED PRIMARILY OF SHALE AND SANDSTONE WITH SOME INTERMINGLING OF LIMESTONE. THE PERFORATED INTERVALS WERE FRACTURED DURING TESTING SO NO FURTHER TREATMENT IS ANTICIPATED.

THERE ARE NO FRESH WATER WELLS WITHIN ONE MILE OF THE INJECTION WELL SO NO FRESH WATER ANALYSIS IS INCLUDED. THE BASE OF ANY FRESH WATER WILL BE AT AROUND 350 FEET WHICH IS IN THE RUSTLER ANHYDRITE. FRESH WATER IN THE AREA IS USED PRIMARILY FOR LIVESTOCK WATERING. THE AVAILABLE GEOLOGIC AND ENGINEERING DATA HAS BEEN EXAMINED AND THERE IS NO EVIDENCE OF OPEN FAULTS OR ANY OTHER HYDROLOGIC CONNECTION BETWEEN THE DISPOSAL ZONE AND ANY UNDERGROUND SOURCE OF DRINKING WATER.

THE LAND UPON WHICH THE WELL IS LOCATED IS STATE LAND AND IS NOT PRESENTLY LEASED FOR OIL AND GAS EXPLORATION.

COPIES OF THE APPLICATION HAVE BEEN SENT BY CERTIFIED MAIL
TO THE FOLLOWING:

H. E. YATES
BOX 1933
ROSWELL, NM 88201

CIMARRON ENERGY
BOX 1525
CARLSBAD, NM 88220

ENRON
BOX 2267
MIDLAND, TX 79702

AMOCO PETROLEUM CORP.
BOX 3092
HOUSTON, TX 77253

NEW MEXICO STATE LAND OFFICE
BOX 1148
SANTA FE, NM 87504-1148

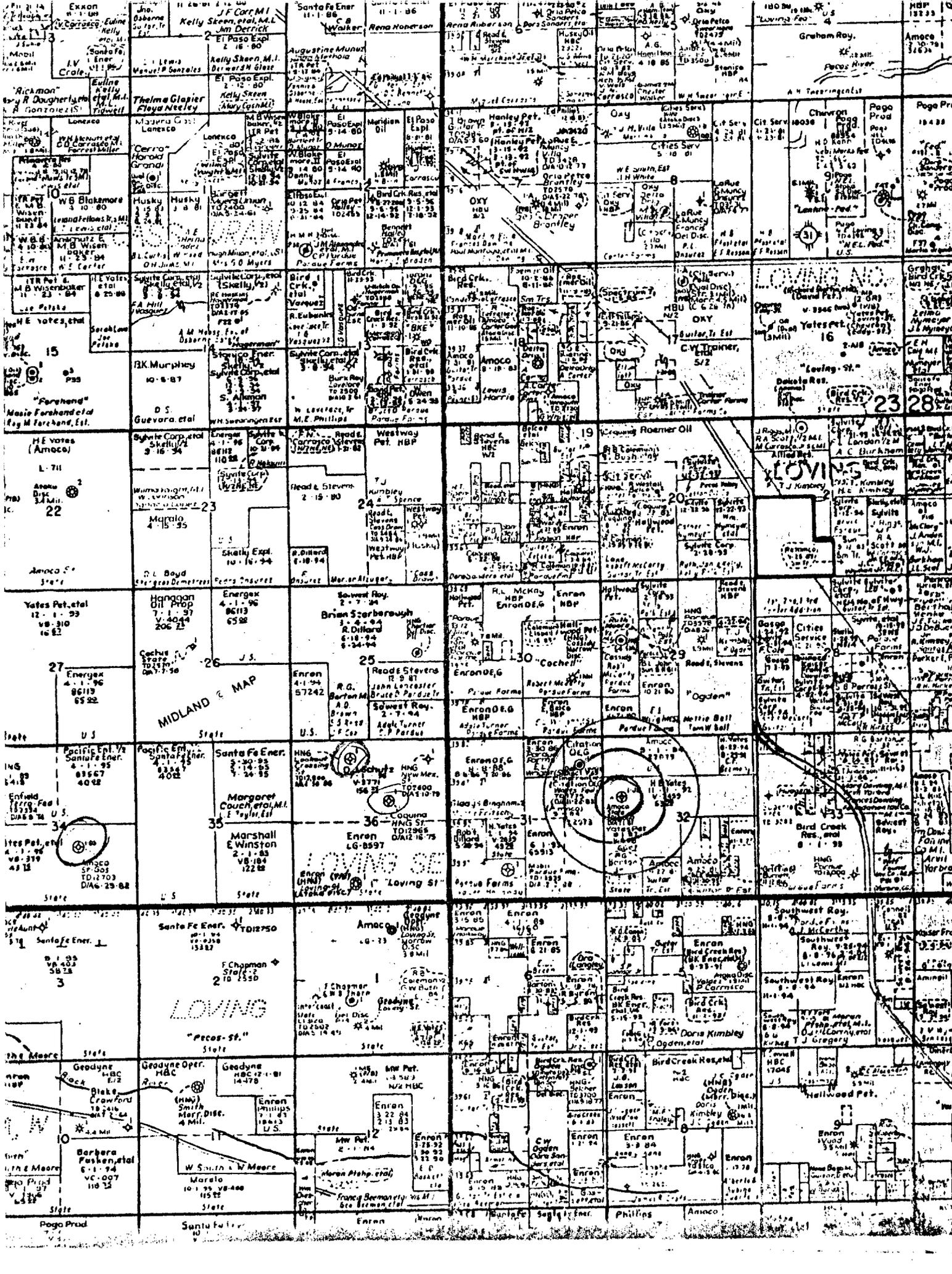


TABLE NA.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

SB NO	LOCATION SEC. T. R.	DATE OF COLLECTION	DEPTH FROM TD	SAMP- LING METHOD	SILICA (SiO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS Na (MG/L)	BICAR- BONATE + ARBONATE (MG/L)	SULFATE (SO4) (MG/L)	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUO- RIDE (F) (MG/L)	NIT- RATE (NO3) (MG/L)	DENSITY OF WATER (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	SPECIFIC CONDUCT- ANCE (UMHOS /CM AT 25C)	SPEC COND- ANCE (UMHOS /CM AT 25C)
1	10 18	07-07-59	6.002	FG			4.800	2.700	23.002	1.700	1.600		51.000			1.063	85.000	.454	96
2	10 18	07-07-59	5.837	FG			4.800	1.900	12.900	1.600	1.300		28.000			1.038	48.000	.676	59
3	10 18	07-07-59	2.932	DT			4.800	2.900	6.300	1.150	1.900		12.000			1.022	24.000	.405	30
4	10 18	07-07-59	2.932	DT			1.300	2.900	9.200	1.350	3.900		12.000			1.020	23.000	.394	29
5	10 18	07-07-59	2.932	DT		TR	1.700	2.900	10.000	1.700	3.900	440.	18.000			1.024	23.000	.325	29
6	10 18	07-07-59	2.799	FG			1.500	2.900	13.700	1.700	1.600		18.000			1.032	32.000	.247	42
7	10 18	07-07-59	2.799	DT			1.500	2.900	13.700	1.700	1.600		23.000			1.021	32.000	.225	52
8	10 18	07-07-59	2.799	DT			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
9	10 18	07-07-59	2.799	DT			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
10	11 18	01-17-59	6.104	ST			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
11	11 18	01-17-59	6.104	ST			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
12	11 18	01-17-59	6.104	ST			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
13	11 18	08-31-59	6.104	ST			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
14	11 18	08-31-59	6.104	ST			1.500	2.900	13.700	1.700	1.600		18.000			1.021	32.000	.247	42
15	12 18	07-21-59	6.127	PD			21.000	9.700	26.000	1.176	2.400		59.000			1.114	150.000	2.120	139
16	16 18	04-16-60	5.526	DT			1.100	390	4.700	369	7.500	510.	7.200			1.007	200.000	.422	176
17	16 18	04-16-60	5.526	DT			1.200	2,200	70.000	369	2.800		120.000			1.134	190.000	.100	160
18	16 18	06-30-61	5.555	ST		3.0	3.500	75.000	75.000	151	2.800	0.0	140.000			1.130	230.000	.098	180
19	16 18	06-30-61	5.555	ST		610.	2,000	82.000	82.000	197	6.800	0.0	120.000			1.035	57.000	.077	170
20	17 18	05-31-59	5.500	DT			1.100	2,160	20.000	343	6.800	0.0	120.000			1.138	200.000	.279	171
21	17 18	05-31-59	5.500	DT		74.	5.400	69.000	69.000	343	2.700	180.	120.000			1.010	13.000	.279	152
22	19 18	12-21-59	5.800	DT			610.	1,170	3,660	1,990	3,500		16.000			1.025	32.000	.250	182
23	19 18	12-21-59	5.800	DT			1.900	150	9.700	1,990	2,100		15.000			1.024	32.000	.250	182
24	19 18	12-21-59	5.800	DT			1.600	180	9.500	1,860	2,100		15.000			1.024	32.000	.250	182
25	19 18	03-21-59	6.313	DT			2,750	2,310	8,400	1,790	7.200		3.400			1.010	32.000	.165	159
26	19 18	03-21-59	6.313	DT			860.	210	1,500	1,790	7.200		3.400			1.010	32.000	.165	159
27	19 18	03-21-59	6.313	DT			1,000	3,900	2,200	354	1,700		3.400			1.060	25.000	.962	33
28	19 18	03-21-59	6.313	DT			3,300	3,900	2,200	354	1,700		3.400			1.035	49.000	1.259	59
29	19 18	03-21-59	6.313	DT			10,000	55	4,000	965	2,800		31.000			1.060	80.000	8.783	60
30	21 20	10-21-60	4.569	SB			250	55	4,000	965	2,800		31.000			1.060	80.000	8.783	60
31	22 22	10-21-60	3.510	DT			550	150	1,170	80	2,000		1,030			1.001	3,100	5.402	91
32	22 22	10-21-60	3.510	DT			550	150	1,170	80	2,000		1,030			1.001	3,100	5.402	91
33	22 22	10-21-60	3.510	DT			550	150	1,170	80	2,000		1,030			1.001	3,100	5.402	91
34	24 24	07-21-61	3.480	DT			580.	140	170	781	1,200	2.0	13.000			1.001	3,100	5.402	91
35	24 24	07-21-61	3.587	DT			1,300	380	8.400	747	3,400		13.000			1.020	27.000	.265	178
36	35 17	12-18-60		ST			2,800	320	81.000	365	4,800		130.000			1.130	219.000	.062	187
37	35 17	12-18-60		ST			1,200	380	11.000	365	4,800		130.000			1.024	32.000	.202	40
38	35 17	12-18-60		ST			1,500	600	18.000	913	3,100		26.000			1.026	51.000	.157	59
39	39 17	05-11-62	6.950	DT			1,600	380	14.000	2,170	4,200		21.000			1.025	43.000	.184	51
40	39 17	05-11-62	6.950	DT			1,600	380	14.000	2,170	4,200		21.000			1.025	43.000	.184	51
41	39 17	05-11-62	6.950	DT			1,600	380	14.000	2,170	4,200		21.000			1.025	43.000	.184	51
42	10 18	11-18-58	5.700	DT			430	130	4,300	319	2,200		4,900			1.010	14.000	.170	16
43	10 18	11-18-58	5.700	DT			3,400	300	22.000	319	2,200		4,900			1.071	94.000	.290	104
44	10 18	11-18-58	5.700	DT			3,400	300	22.000	319	2,200		4,900			1.071	94.000	.290	104
45	10 18	11-18-58	5.700	DT			3,400	300	22.000	319	2,200		4,900			1.071	94.000	.290	104
46	10 18	11-18-58	5.700	DT			3,400	300	22.000	319	2,200		4,900			1.071	94.000	.290	104
47	10 18	11-18-58	5.700	DT			3,400	300	22.000	319	2,200		4,900			1.071	94.000	.290	104
48	10 18	11-18-58	5.700	DT			3,400	300	22.000	319	2,200		4,900			1.071	94.000	.290	104
49	28 28	02-10-65	6.780	DT			1,600	510	19.000	2,190	2,900		31.000			1.020	58.000	.235	38
50	28 28	02-10-65	6.780	DT			1,600	510	19.000	2,190	2,900		31.000			1.020	58.000	.235	38
51	28 28	02-10-65	6.780	DT			1,600	510	19.000	2,190	2,900		31.000			1.020	58.000	.235	38
52	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
53	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
54	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
55	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
56	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
57	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
58	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
59	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
60	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
61	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
62	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
63	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
64	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
65	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
66	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
67	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
68	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
69	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
70	33 18	06-27-59	6.837	DT		50.	1,300	180	48.000	508	2,000		4,100			1.082	10.000	.916	12
71	33 18	06-2																	

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY ROTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

Table with columns: SD NO, LOCATION, DATE OF COLLECTION, DEPTH FROM TO, SAMP. LING METHOD, IRON (FE), CALCIUM (CA), MAGNESIUM (MG), SODIUM + POTASSIUM AS NA (MG/L), BICARBONATE + CARBONATE (MG/L), SULFATE (SO4) (MG/L), 4-VORGEN SULFIDE (MG/L), CHLORIDE (CL) (MG/L), FLUID RIDE (F) (MG/L), NITRATE (NO3) (MG/L), DENSITY OF WATER AT 20C (GRAM/ML), DISSOLVED SOLIDS (SUM) (MG/L), SPECIFIC CONDUCTANCE (UMHRS AT 25C), and SPECIFIC CONDUCTANCE (UMHRS AT 25C). Rows are numbered 1 to 53.

EDDY COUNTY

EDDY COUNTY

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

SD NO	LOCATION	DATE OF COLLECTION	DEPTH FROM TO	SAMP- LING METHOD	SILICA (SiO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG/L)	SODIUM + POTASSIUM AS Na (MG/L)	BICARBONATE (MG/L)	SULFATE (SO4) (MG/L)	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/(M+K) (MARK) AT 25C	SPECIFIC CONDUCTANCE (UMHDS AT 25C)	SPE CON ANC (U AT
1	22	10-17-70	3,417-3,434	453DL SD TR			9,400	2,300	46,000	572	1,400		35,000		1.106	160,000		314	171,000	153
2	23	10-17-70	3,411-3,434	453DL SD ST			9,300	2,400	48,000	574	1,400		35,000		1.106	160,000		314	171,000	153
3	12	03-25-60	2,480	453DL SD			3,100	1,400	45,000	101	1,800		60,000		1.095	150,000		189	132	132
4	15	03-00-59	2,480	453DL SD	MD	TR	5,300	2,600	100,000	192	2,000	0.0	180,000		1.094	300,000		189	205	205
5	15	03-19-59		453DL SD																
6	25	06-21-60	3,838-3,842	453DL SD SB		MD	9,000	1,500	45,000	40	400	0.0	90,000		1.090	150,000		288	148	148
7	8	04-03-63	3,724	453DL SD SB		0.0	8,600	2,100	51,000	122	130	0.0	93,000		1.105	160,000		270	150	150
8	17	05-17-66	3,668	453DL SD WH			8,300	1,000	47,000	24	350	0.0	90,400		1.105	150,000		266	147	147
9	11	05-00-62	3,800	453DL SD RR			5,500	2,500	67,500	771	1,100	0.0	98,000		1.101	180,000		084	142	142
10	24	03-18-59	3,450	453DL SD DT		TR	7,500	2,600	77,000	139	1,300	0.0	110,000		1.110	190,000		238	165	165
11	20	03-18-59	3,450	453DL SD DT		TR	9,800	2,500	59,000	137	1,300	0.0	98,000		1.100	180,000		330	156	156
12	24	03-18-59	4,112	453DL SD			24,000	3,100	120,000	430	1,300	0.0	130,000		1.149	210,000		634	178	178
13	24	01-22-58	4,972	453DL SD			19,000	3,800	52,000	159	340	TR	170,000		1.187	280,000		034	207	207
14	28	11-06-60	5,074	453DL SD		50	19,000	3,600	58,000	70	800	TR	160,000		1.173	250,000		379	194	194
15	27	16	4,395	453DL SD			2,600	710	4,000	236	2,700	TR	72,000		1.099	150,000		099	162,000	162,000
16	30	04-22-59	6,813	453DL SD DT		11	1,120	51	6,300				9,700		1.074	120,000		037	130	130
17	30	04-30-59	6,786	453DL SD DT		TR			110,000				170,000		1.108	198,000		445	188,000	188,000
18	20	09-21-59	2,670	453DL SD			1,400	730	6,700	1,530	3,400	0.0	10,000		1.015	25,000		034	34,100	34,100
19	24	02-15-67	3,624	453DL SD ST					5,900				9,100		1.016	25,000		034	34,100	34,100
20	22	11-05-70	3,417	453DL SD ST					63,000	574			97,000		1.196	170,000		034	170,000	170,000
21	22	02-15-67	1,870	453DL SD ST					69,000	650			110,000		1.114	179,000		034	179,000	179,000
22	11	02-00-58	1,900	453DL SD TR		0.0	1,400	770	73,000				140,000		1.135	230,000		182	194	194
23	13	02-00-67	2,166	453DL SD SB			2,200	1,800	73,000	95			59,000		1.071	191,000		182	194	194
24	27	00-00-00	1,969	453DL SD SB					48,000	182			91,000		1.105	150,000		034	150,000	150,000
25	13	04-23-59	4,573	453DL SD DT		TR	6,300	1,600	48,000	850	10,000	TR	13,000		1.019	38,000		034	150,000	150,000
26	24	03-24-59	4,623	453DL SD DT		HV	300	0.0	13,000	232			110,000		1.110	180,000		034	150,000	150,000
27	24	05-19-60	3,850	453DL SD WH			13,000	2,600	53,000	232	1,200	0.0	110,000		1.110	180,000		034	150,000	150,000
28	25	02-00-63	3,700	453DL SD DT			7,600	1,800	63,000	82	1,400	0.0	120,000		1.130	190,000		194	172	172
29	20	02-00-63	3,672	453DL SD DT		0.0	2,900	2,900	49,000	68	510	0.0	97,000		1.109	160,000		301	154	154
30	25	02-15-63	3,685	453DL SD DT			8,000	1,800	55,000	81	1,000	0.0	100,000		1.115	170,000		287	162	162
31	20	02-15-63	3,692	453DL SD DT		0.0	3,000	880	120,000	86	2,800	0.0	97,000		1.175	310,000		043	212	212
32	20	02-21-63	3,692	453DL SD DT			8,000	2,900	49,000	68	510	0.0	97,000		1.109	160,000		301	154	154
33	26	02-00-67	3,450	453DL SD DT		TR	8,100	2,400	55,000	137	620	0.0	98,000		1.094	146,000		294	154	154
34	16	03-18-59		453DL SD DT					47,000				98,000		1.000	160,000		090	2,310	2,310
35	16	03-20-64		453DL SD FL					13				20		1.000			2,310	2,310	
36	16	03-20-64		453DL SD FL					13				20		1.000			2,310	2,310	
37	16	08-09-65		453DL SD FL					23				36		1.000			2,310	2,310	
38	16	08-09-65		453DL SD FL					13				20		1.000			2,310	2,310	
39	16	08-09-65		453DL SD FL					13				20		1.000			2,310	2,310	
40	16	08-09-65		453DL SD FL					13				20		1.000			2,310	2,310	
41	16	08-09-65		453DL SD FL					13				20		1.000			2,310	2,310	
42	16	08-09-65		453DL SD FL					13				20		1.000			2,310	2,310	
43	16	08-09-65		453DL SD FL					13				20		1.000			2,310	2,310	
44	33	16		453DL SD FL					6.0				10		1.000			2,310	2,310	
45	33	16		453DL SD FL					6.0				10		1.000			2,310	2,310	
46	35	16		453DL SD FL					15				23		1.000			2,310	2,310	
47	27	16	4,000	453DL SD BR			1,700	620	34,000	40	170	0.0	57,000		1.070	94,000		090	2,970	2,970
48	19	17	1,140	453DL SD BR					19				30		1.000			2,970	2,970	
49	17	23		453DL SD BR					10				10		1.000			2,970	2,970	
50	17	23		453DL SD BR					10				10		1.000			2,970	2,970	
51	17	23		453DL SD BR					10				10		1.000			2,970	2,970	
52	17	23		453DL SD BR					10				10		1.000			2,970	2,970	
53	17	23		453DL SD BR					13				20		1.000			2,970	2,970	

EDDY COUNTY

EDDY COUNTY

Affidavit of Publication

No. 14132

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

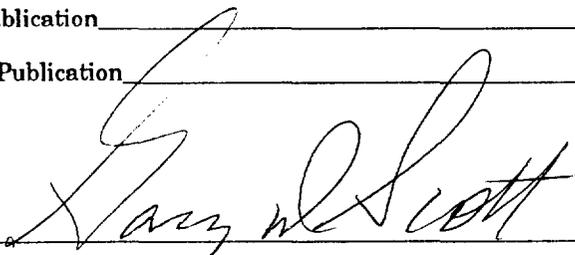
was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks on the same day as follows:

First Publication November 20, 1992

Second Publication _____

Third Publication _____

Fourth Publication _____



Subscribed and sworn to before me this 20th day

of November 1992



Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1996

Copy of Publication

OIL CONSERVATION DIVISION

RECEIVED

'92 NOV 30 AM 9 14

LEGAL NOTICE

Trice Operations, Inc., Box 58, Muleshoe, TX 79702, will re-vert the rights of this oil and gas lease well located 1900 feet from the North well 441 feet from the West line of Section 32, Township 35 North, Range 28 East, Eddy County, New Mexico. The estimated salt water disposal well location will be into the Spring Formation at a depth of 6325 feet to 6500 feet. Maximum injection volume will be 300 barrels per day at pressure not to exceed 2000 psi. Interested parties have 15 objections or suggest the location with the Oil Conservation Division, P.O. Box 3088, Santa Fe, NM 87504-2088 within 15 days. Published in the Artesia Daily Press, Artesia, N.M., November 20, 1992. Legal 14132

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. Addressee's Address
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
N. Mex. State Land Office
Box 1148
Santa Fe, NM 87504-1148

4a. Article Number
P 401 653 607

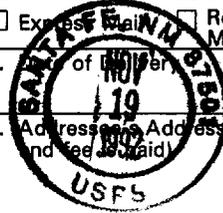
4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
NOV 19 1991

8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)
M. Lucero

6. Signature (Agent)



PS Form 3811, December 1991 ☆ U.S.G.P.O. : 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. Addressee's Address
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
H. E. Yates
Box 1933
Roswell, NM 88201

4a. Article Number
P 401 653 611

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery
11/18/91

8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)

6. Signature (Agent)
Dorinda Hepper

PS Form 3811, December 1991 ☆ U.S.G.P.O. : 1992-307-530 **DOMESTIC RETURN RECEIPT**

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- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. Addressee's Address
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Cimarron Energy
Box 1525
Carlsbad, NM 88220

4a. Article Number
P 401 653 610

4b. Service Type
 Registered Insured
 Certified COD
 Express Mail Return Receipt for Merchandise

7. Date of Delivery

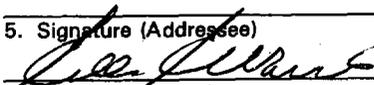
8. Addressee's Address (Only if requested and fee is paid)

5. Signature (Addressee)

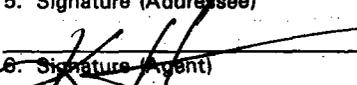
6. Signature (Agent)

PS Form 3811, December 1991 ☆ U.S.G.P.O. : 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?	SENDER: <ul style="list-style-type: none"> • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered. 		I also wish to receive the following services (for an extra fee):	
	3. Article Addressed to: <i>Enron Box 2267 Midland, TX 79702</i>		1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.	
		4a. Article Number <i>P 401 653 609</i>		
		4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise		
		7. Date of Delivery <i>NOV 19 1992</i>		
5. Signature (Addressee) 		8. Addressee's Address (Only if requested and fee is paid)		
6. Signature (Agent)				
PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 DOMESTIC RETURN RECEIPT				

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Is your RETURN ADDRESS completed on the reverse side?	SENDER: <ul style="list-style-type: none"> • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered. 		I also wish to receive the following services (for an extra fee):	
	3. Article Addressed to: <i>Amoco Petr. Corp Box 3092 Houston, TX 77253</i>		1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.	
		4a. Article Number <i>P 401 653 608</i>		
		4b. Service Type <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise		
		7. Date of Delivery <i>NOV 19 1992</i>		
5. Signature (Addressee) 		8. Addressee's Address (Only if requested and fee is paid)		
6. Signature (Agent)				
PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 DOMESTIC RETURN RECEIPT				

Thank you for using Return Receipt Service.