STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: TOCO, L.L.C.

Address: P.O. Box 888

Contact party: Debbie McKelvey Phone: (505) 392-7050

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 _____.

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: Debbie McKelvey Title Agent

Signature: Debbie McKelvey Date: 01/05/96

* 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. _____

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

III. WELL DATA

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

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.

APPLICATION FOR AUTHORIZATION
For Salt Water Disposal

TOCO, L.L.C.

Morse "A" No. 1

Statements of Compliance

Item III - A : See Exhibit "A"

Item III - B : (1) San Andres

(2) Open Hole 5196'-5390'

(3) Drilled for oil production from the North Echols Devonian pool.

(4) Originally drilled by the Texas Company as the Texas Gulf State Lea #1 to a total depth of 12,000 feet. It was plugged and abandoned 5/26/64 after producing 615,805 barrels of oil from the lower Devonian. The well was re-entered by C.W. Trainer on 10/2/90 and tested the upper Devonian which was wet. Approval was granted by Administrative Order No. SWD-454 to complete this well as a salt water disposal well in the upper Devonian on 11/18/91. During repair of a casing leak at 5200' the well was plugged back and sidetracked to a new T.D. of 5390'.

(5) The Devonian at 11,905 feet is the next lower oil zone. There are no known higher oil or gas zones in the area of review.

Item V : See Exhibit "B"

Item VI : See Exhibit "C" for tabular data of all wells.
See Exhibit "D" for schematics of plugged wells.

Item VII : (1) Estimated average rate is 300 bbls/day. Estimated maximum rate is 1000 bbls/day.

(2) The system is closed.

(3) Average injection pressure is 0 psig. Maximum injection pressure is 500 psig.

(4) Source of injection fluid is Devonian produced water from the TOCO Morse No. 1. See Exhibit "E" for analysis of Devonian water.
See Exhibit "F" for Compatibility Tests of the Devonian and San Andres waters.

(5) See Exhibit "G" for analysis of San Andres water.

Item VIII : The San Andres formation in the area of review is a Tan-grey anhydritic dolomite with pinpoint and vuggy porosity from 5200'-5400'. The only known fresh water in the area is the Ogallala formation found at a depth of 100' with a thickness of 30'.

Item IX : Stimulate with 4500 gals of 28% HCl + inhibitors.

Item X : Electric logs have previously been filed with the Division by the Texas Company.

Item XI : Only one fresh water well was found within a radius of one mile (C-27-10S-37E). See Exhibit "H" for analysis of the fresh water.

Item XII : All geologic and engineering data available indicates no evidence of open faults or any other hydrologic connection between the San Andres and any underground source of drinking water.

Item XIII : A copy of Form C-108 with the Statement of Compliance and associated exhibits has been sent by certified mail as follows:

Surface Owner: New Mexico State Land Office
P.O. Box 1148
Santa Fe, NM 87504-1148

Surface Lessee: DASCO Land Corporation
P.O. Box 947
Hobbs, NM 88241

Offset Operators: Maralo
Five Post Oak Park
Suite 1010
Houston, TX 77027-3489

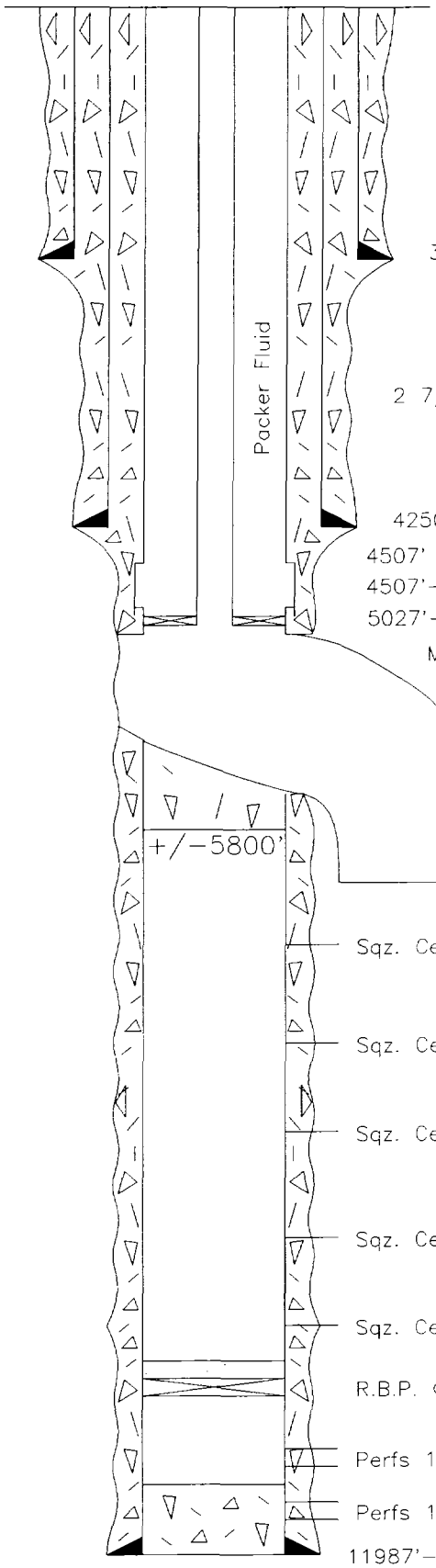
Santa Fe Energy
550 West Texas
Midland, TX 79701

Yates Petroleum
105 S. 4th Street
Artesia, NM 88210

See Exhibit "I" for Copies of Certified Mail Receipts

See Exhibit "J" for Proof of Publication in the Hobbs Daily News Sun

CURRENT WELLBORE STATUS
12/18/95



343' – 13 3/8", 48# Csg. Cemented w/400 sxs Circ. to Surface

2 7/8", 6.5#, Internally Plastic Coated Tubing @ 5043'

4250' – 8 5/8", 32#, Csg. Cemented w/2500 sxs Circ. to Surface
4507' – 5 1/2", 15.5#, K-55 Cemented w/450 sxs Circ. to Surface
4507'– 5104' 7" Casing Bowl
5027'–5196' 5 1/2", 17#, N-80
Model "R" Nickel Plated @ 5043'

Open Hole 5196'–5390'

Sidetrack T.D. @ 5390'

Sqz. Cemented w/150 sxs @ 6030'

Sqz. Cemented w/275 sxs @ 7013'

Sqz. Cemented w/175 sxs @ 8044'

Sqz. Cemented w/70 sxs @ 9044'

Sqz. Cemented w/75 sxs @ 10100'

R.B.P. @ 11750' w/3 sxs sand

Perfs 11806'–10'

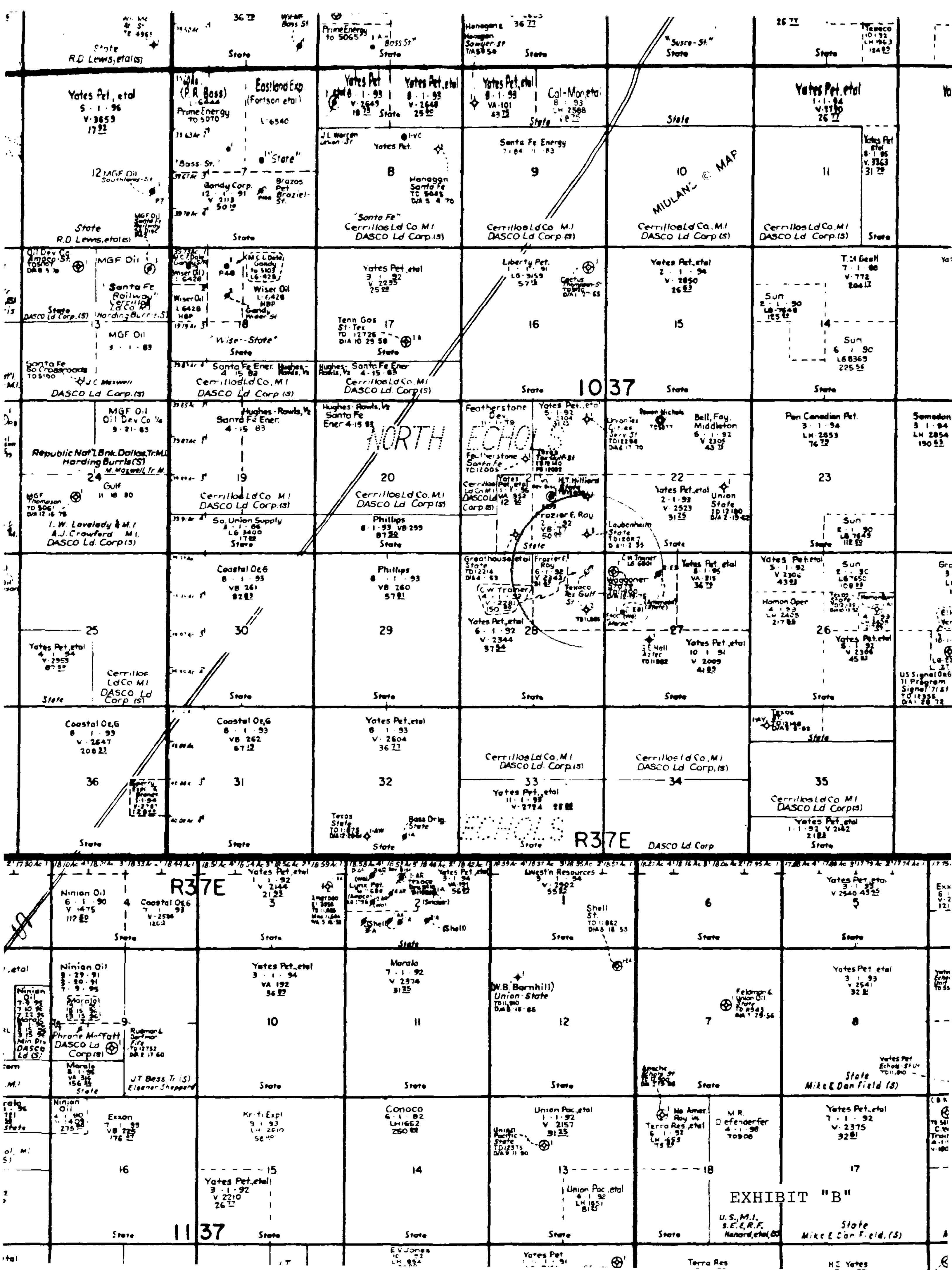
Perfs 11905'–30' Sqz.'d w/150 sxs

11987'–5 1/2", 17 & 20#, N-80
Cemented w/350 sxs

T.D. @ 12000'

EXHIBIT "A"

TOCO, LLC
Morse "A" No. 1 – SWD
660' FNL & 660' FEL
Section 28, T-10S, R-37E
Lea County, New Mexico



NORTH ECHOLS
10 37
R37E
11 37
MIDLAND MAP
Yates Pet., etal
State
Cerrillos Ld Co. M.I
DASCO Ld Corp.(S)
Santa Fe Energy
Coastal Oil & G
Phillips
Sun
Pan Canadian Pet.
Ninian Oil
Morale
Conoco
Exxon
Union Pac., etal
Shell
Mike & Dan Field (S)
EXHIBIT "B"

TABULAR SUMMARY
OF WELLS WITHIN A ONE-HALF MILE RADIUS

TOCO, L.L.C.

Morse "A" No. 1

Section 21, T-10S, R-37E

The Texas Company - Texas Gulf State Lea #3
660' FSL & 660' FEL
Spud : 8/8/55 Completed : 11/26/55 Type : Dry and Abandoned
Casing : 13 3/8" @ 344' w/400 sxs Circulated
8 5/8" @ 4265' w/4200 sxs
T.D. : 12,087' P & A : 11/26/55
See Exhibit "D" for schematic

H. T. Hilliard - State 21 #1
1980' FSL & 660' FEL
Spud :11/2/67 Completed : 12/18/67 Type : Dry and Abandoned
Casing : 13 3/8" @ 350' w/300 sxs Circulated
8 5/8" @ 4263' w/500 sxs
T.D. : 12,039' P & A : 12/18/67
See Exhibit "D" for schematic

Section 27, T-10S, R-37E

Amerada Petroleum Corporation - State "EB" #2
660' FNL & 1980' FWL
Spud : 1/10/55 Completed : 3/18/55 Type : Oil Well
Casing : 13 3/8" @ 338' w/250 sxs Circulated
8 5/8" @ 4270' w/1500 sxs, T.O.C. @ 1818'
5 1/2" @ 11875' w/500 sxs, T.O.C. @ 10100'
T.D. : 11,901' Open Hole : 11,875'-11,901'
Formation : Devonian
P & A : 9/28/64
See Exhibit "D" for schematic

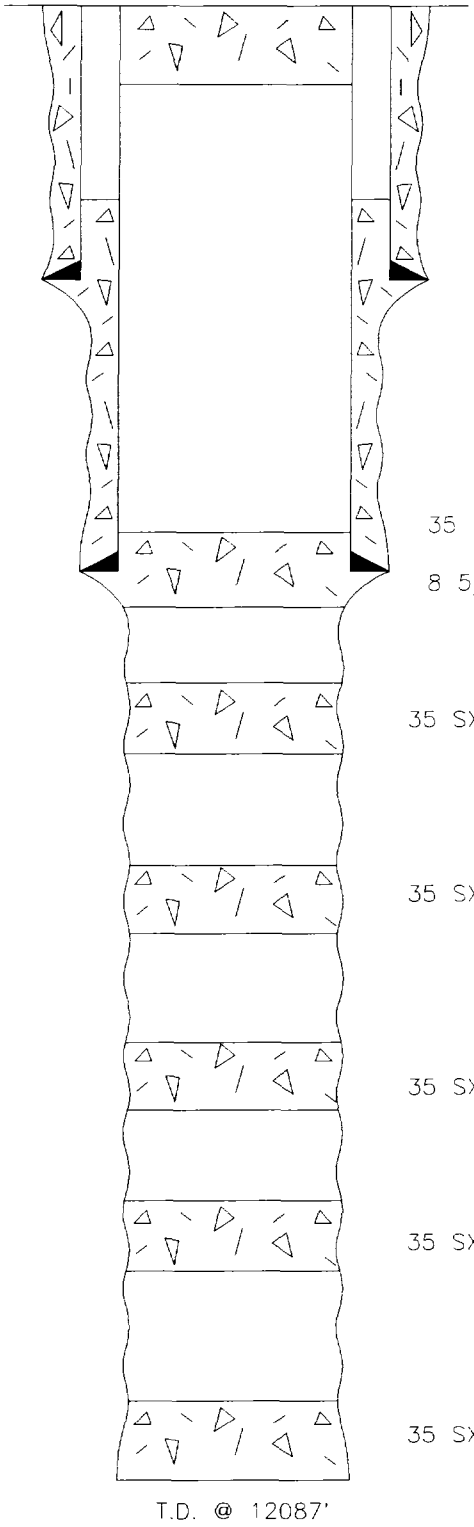
Waggoner Exploration Company - State 27 #1
660' FNL & 330' FWL
Spud :10/22/75 Completed :12/19/75 Type :Dry and Abandoned
Casing : 13 3/8" @ 346' w/400 sxs Circulated
8 5/8" @ 4241' w/450 sxs
T.D. : 11,900' P & A : 12/19/75
See Exhibit "D" for schematic

Exhibit "C"

TOCO, L.L.C. - Morse #1
1980' FNL & 660' FWL
Drilled by Amerada Petroleum Corp. - State "EB" #1
Spud :6/24/54 Completed :9/23/54 Type :Oil Well
Casing : 13 3/8" @ 340' w/250 sxs Circulated
8 5/8" @ 4270' w/1500 sxs, T.O.C. @ 2444'
5 1/2" @ 11930' w/200 sxs, T.O.C. @ 11100'
T.D. : 11,930' Perfs 11755'-11834'
Formation : Devonian
Dualed for SWD into San Andres 5210'-5260' 11/15/68
P & A : 12/31/73
Re-entered by C.W. Trainer (TOCO) : 7/31/89
Perfs 11783'-11784'
Formation : Devonian
Type : Producing Oil Well

Section 28, T-10S, R-37E

The Texas Company - Texas Gulf State Lea #2
1980' FNL & 660' FEL
Spud :12/30/54 Completed :3/24/55 Type : Dry and Abandoned
Casing : 13 3/8" @ 318' w/400 sxs Circulated
8 5/8" @ 4238' w/2500 sxs
5 1/2" @ 11887' w/350 sxs
T.D. : 11,887' Perfs 11,866'-11,881'
Formation : Devonian (Non-commercial)
P & A : 5/26/55
See Exhibit "D" for schematic



15 SX SURFACE PLUG

13 3/8" @ 344' W/400 SXS CIRC. TO SURFACE

35 SX PLUG 4215'–4315'

8 5/8" @ 4265' W/1200 SXS

35 SX PLUG 5650'–5750'

35 SX PLUG 7000'–7100'

35 SX PLUG 9070'–9170'

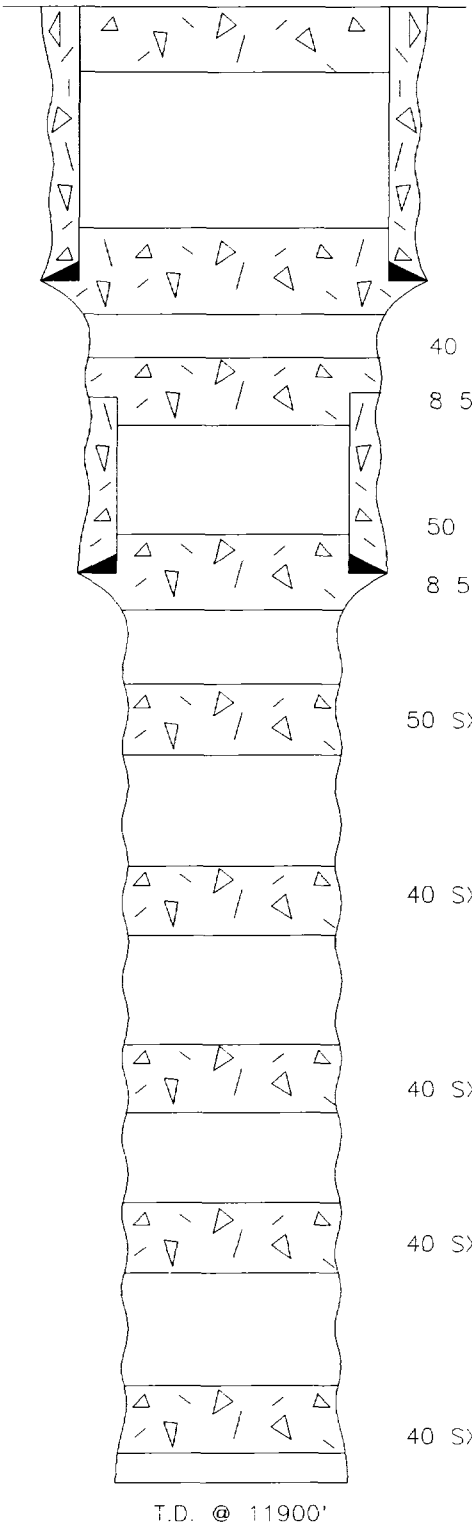
35 SX PLUG 11400'–11500'

35 SX PLUG 11987'–12087'

T.D. @ 12087'

EXHIBIT "D"

THE TEXAS COMPANY
Texas Gulf State Lea #3
660' FSL & 660' FEL
Section 21, T–10S, R–37E
Lea County, NM



10 SX SURFACE PLUG

75 SX PLUG 296'–396'

13 3/8" @ 346' W/400 SXS CIRC. TO SURFACE

40 SX PLUG 1425'–1525'

8 5/8" SHOT AND PULLED FROM 1473'

50 SX PLUG 4191'–4291'

8 5/8" @ 4241' W/450 SXS

50 SX PLUG 5600'–5700'

40 SX PLUG 7640'–7740'

40 SX PLUG 8700'–8800'

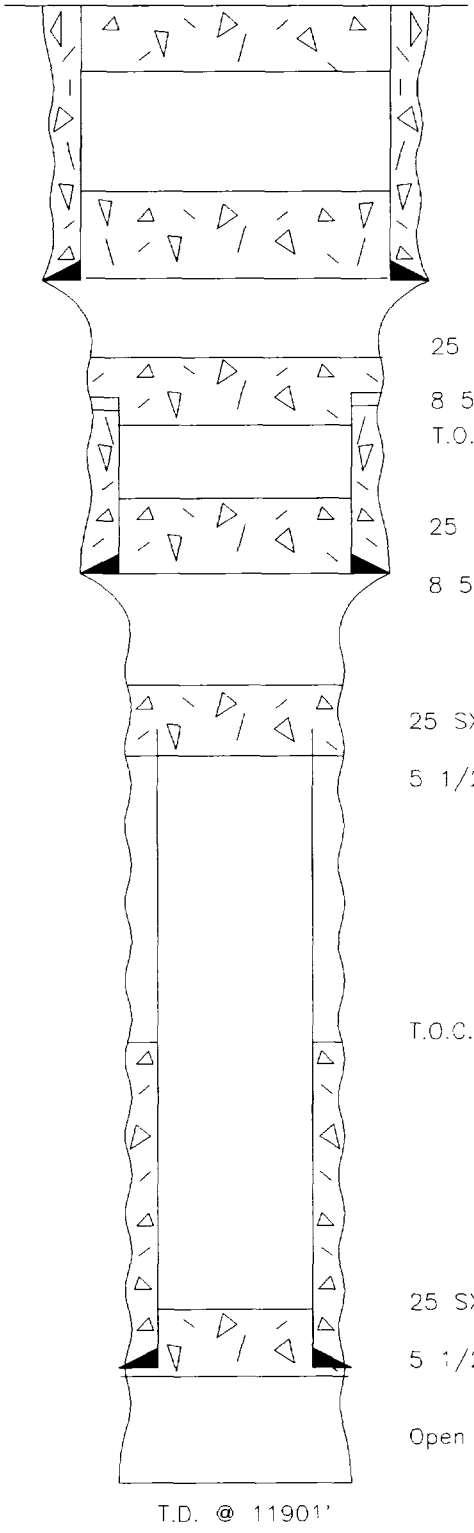
40 SX PLUG 9200'–9300'

40 SX PLUG 11690'–11790'

T.D. @ 11900'

EXHIBIT "D"

WAGGONER EXPLORATION CO.
State 27 #1
660' FNL & 330' FWL
Section 27, T–10S, R–37E
Lea County, NM



10 SX SURFACE PLUG

25 SX PLUG 305'–338'

13 3/8" @ 338' W/250 SXS CIRC. TO SURFACE

25 SX PLUG 1183'–1217'

8 5/8" SHOT AND PULLED FROM 1200'
T.O.C. @ 1818'

25 SX PLUG 4190'–4270'

8 5/8" @ 4270' W/1500 SXS

25 SX PLUG 4412'–4660'

5 1/2" CASING SHOT AND PULLED FORM 4652'

T.O.C. @ 10100'

25 SX PLUG 11654'–11875'

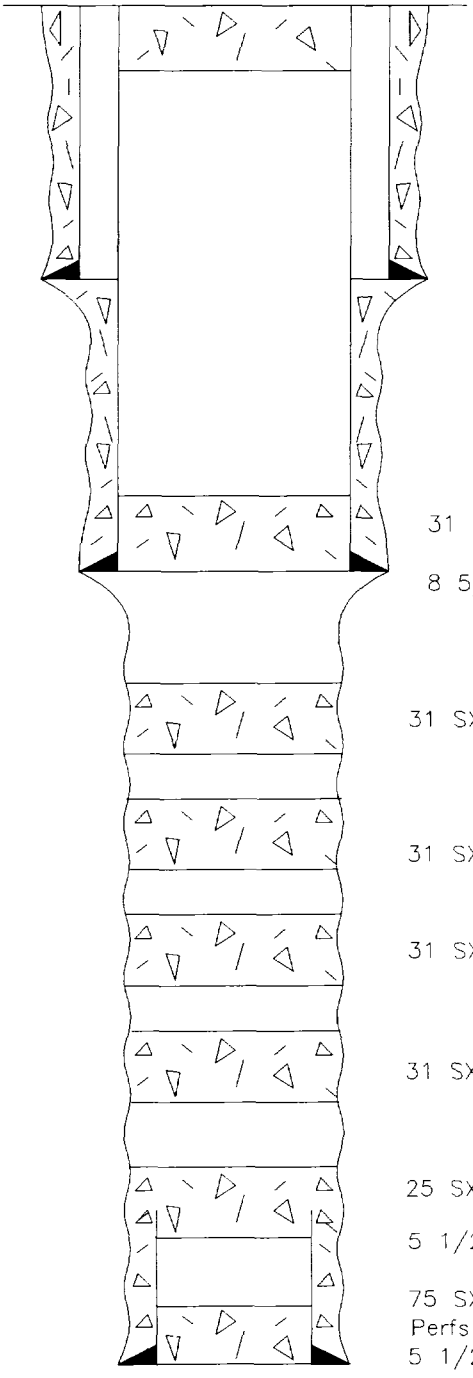
5 1/2" @ 11875' w/500 sxs

Open Hole 11875'–11901'

T.D. @ 11901'

EXHIBIT "D"

AMERADA PETROLEUM CORP.
State "EB" #2
660' FNL & 1980' FWL
Section 27, T-10S, R-37E
Lea County, NM



30 SX SURFACE PLUG

13 3/8" @ 318' W/400 SXS CIRC. TO SURFACE

31 SX PLUG 4188'–4288'

8 5/8" @ 4238' W/2500 SXS

31 SX PLUG 5660'–5760'

31 SX PLUG 6997'–7097'

31 SX PLUG 7694'–7794'

31 SX PLUG 9068'–9168'

25 SX PLUG 9600'–9700'

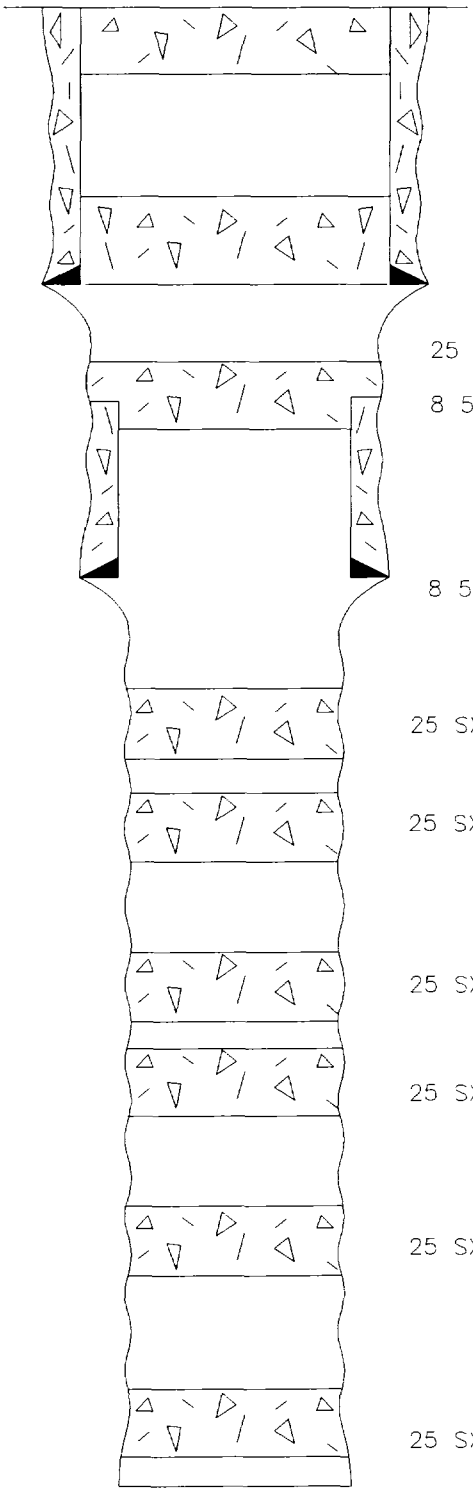
5 1/2" CASING CUT AND PULLED FROM 9700'

75 SX PLUG 11811'–11886'
Perfs 11811'–886'
5 1/2" @ 11887' w/350 sxs

T.D. @ 11887'

EXHIBIT "D"

THE TEXAS COMPANY
Texas Gulf State Lea #2
1980' FNL & 660' FEL
Section 28, T–10S, R–37E
Lea County, NM



10 SX SURFACE PLUG

25 SX PLUG 300'–350'

13 3/8" @ 350' W/300 SXS CIRC. TO SURFACE

25 SX PLUG 1022'–1122'

8 5/8" SHOT AND PULLED FROM 1123'

8 5/8" @ 4263' W/500 SXS

25 SX PLUG 5610'–5710'

25 SX PLUG 6900'–7000'

25 SX PLUG 8806'–8906'

25 SX PLUG 9700'–9800'

25 SX PLUG 11345'–11445'

25 SX PLUG 11904'–12004'

T.D. @ 12039'

EXHIBIT "D"

H. T. HILLIARD
State 21 #1
1980' FSL & 660' FEL
Section 21, T–10S, R–37E
Lea County, NM

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

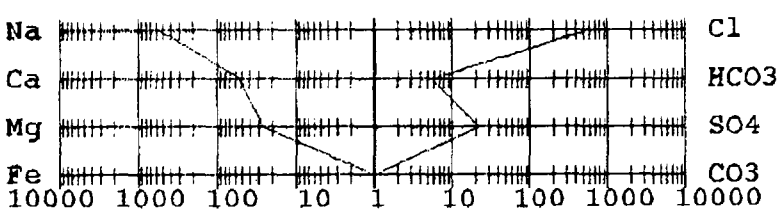
Oil Co. :
Lease : CW Trainer
Well No.: Morse #1
Salesman:

Sample Loc. :
Date Analyzed: 04-January-1996
Date Sampled :

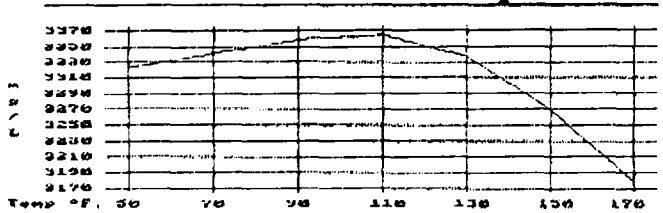
ANALYSIS

1.	pH		7.280		
2.	Specific Gravity 60/60 F.		1.028		
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.094		
		@ 140 F.	+1.064		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	1,002	/ 20.1 =	49.85
8.	Magnesium	(Mg^{++})	304	/ 12.2 =	24.92
9.	Sodium	(Na^{+}) (Calculated)	11,869	/ 23.0 =	516.04
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	332	/ 61.1 =	5.43
14.	Sulfate	($SO_4^{=}$)	1,050	/ 48.8 =	21.52
15.	Chloride	(Cl^{-})	19,995	/ 35.5 =	563.24
16.	Total Dissolved Solids		34,552		
17.	Total Iron (Fe)		4	/ 18.2 =	0.19
18.	Total Hardness As $CaCO_3$		3,753		
19.	Resistivity @ 75 F. (Calculated)		0.235 /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	5.43	440
$CaSO_4$	68.07	21.52	1,465
$CaCl_2$	55.50	22.90	1,271
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	24.92	1,187
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	515.42	30,131

***Milli Equivalents per Liter**

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

EXHIBIT "E"

Comparison Between Two Waters

04-January-1996

TO: Permian Treating Chemicals Company : **Devon Energy**

	Sample # 1	***Sample # 2***
	Morse #1	Marr #3

Percent of #1 & #2	pH	TDS mg/L	SpGr	Saturation Index @80°F.	Saturation Index @140°F.	Calcium Sulfate Scaling Potential
100 - 0	7.280	34,552	1.028	+0.336	+1.140	Nil
95 - 5	7.208	44,225	1.034	+0.281	+1.120	Nil
90 - 10	7.136	53,898	1.041	+0.246	+1.027	Nil
85 - 15	7.064	63,571	1.047	+0.229	+0.967	Nil
80 - 20	6.992	73,245	1.053	+0.305	+1.056	Nil
75 - 25	6.920	82,918	1.060	+0.368	+1.132	Nil
70 - 30	6.848	92,591	1.066	+0.422	+1.198	Nil
65 - 35	6.776	102264	1.072	+0.469	+1.257	Nil
60 - 40	6.704	111937	1.079	+0.509	+1.311	Nil
55 - 45	6.632	121610	1.085	+0.545	+1.359	Nil
50 - 50	6.560	131284	1.092	+0.577	+1.404	Nil
45 - 55	6.488	140957	1.098	+0.605	+1.445	Nil
40 - 60	6.416	150630	1.104	+0.631	+1.483	Nil
35 - 65	6.344	160303	1.111	+0.654	+1.519	Nil
30 - 70	6.272	169976	1.117	+0.675	+1.553	Marginal
25 - 75	6.200	179649	1.123	+0.694	+1.584	Marginal
20 - 80	6.128	189322	1.130	+0.711	+1.614	Marginal
15 - 85	6.056	198996	1.136	+0.726	+1.642	Marginal
10 - 90	5.984	208669	1.142	+0.740	+1.669	Marginal
5 - 95	5.912	218342	1.149	+0.753	+1.694	Marginal
0 - 100	5.840	228015	1.155	+0.765	+1.718	Marginal

EXHIBIT "F"

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : **Coastal Oil & Gas**
Lease : **Sawyer**
Well No.: **Marr #3**
Salesman:

Sample Loc. :
Date Analyzed: **04-January-1996**
Date Sampled :

ANALYSIS

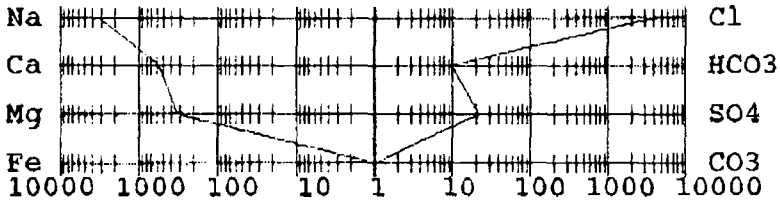
1.	pH	**5.840**	
2.	Specific Gravity 60/60 F.	**1.155**	
3.	$CaCO_3$ Saturation Index @ 80 F.	**+0.978**	
	@ 140 F.	**+2.738**	

	Dissolved Gasses	MG/L	EQ. WT.	*MEQ/L
4.	Hydrogen Sulfide	**Present**		
5.	Carbon Dioxide	**Not Determined**		
6.	Dissolved Oxygen	**Not Determined**		

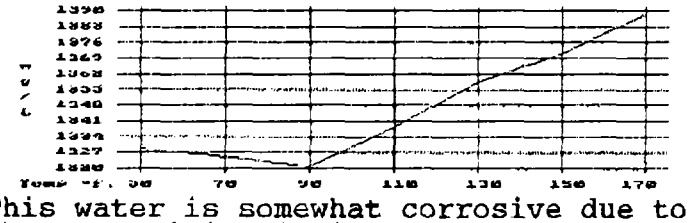
	Cations			MG/L	EQ. WT.	*MEQ/L
7.	Calcium	(Ca^{++})		**11,022**	/ 20.1 =	**548.36**
8.	Magnesium	(Mg^{++})		**3,890**	/ 12.2 =	**318.85**
9.	Sodium	(Na^{+})	(Calculated)	**71,489**	/ 23.0 =	**3,108.22**
10.	Barium	(Ba^{++})		**Not Determined**		

	Anions		MG/L	EQ. WT.	*MEQ/L
11.	Hydroxyl	(OH^{-})	**0**	/ 17.0 =	**0.00**
12.	Carbonate	($CO_3^{=}$)	**0**	/ 30.0 =	**0.00**
13.	Bicarbonate	(HCO_3^{-})	**596**	/ 61.1 =	**9.75**
14.	Sulfate	($SO_4^{=}$)	**1,050**	/ 48.8 =	**21.52**
15.	Chloride	(Cl^{-})	**139,968**	/ 35.5 =	**3,942.76**
16.	Total Dissolved Solids		**228,015**		
17.	Total Iron (Fe)		**1**	/ 18.2 =	**0.05**
18.	Total Hardness As $CaCO_3$		**43,539**		
19.	Resistivity @ 75 F. (Calculated)		**0.001** /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	9.75	791
$CaSO_4$	68.07	21.52	1,465
$CaCl_2$	55.50	517.09	28,698
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	318.85	15,184
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	3,106.82	181,625

***Milli Equivalents per Liter**

This water is somewhat corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts, and the presence of H2S in solution.

EXHIBIT "G"

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

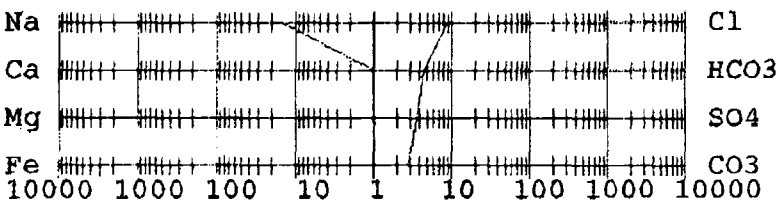
Oil Co. : **Devon Energy**
Lease : **CW Trainer**
Well No.: **Fresh Water Well**
Salesman:

Sample Loc. :
Date Analyzed: **04-January-1996**
Date Sampled :

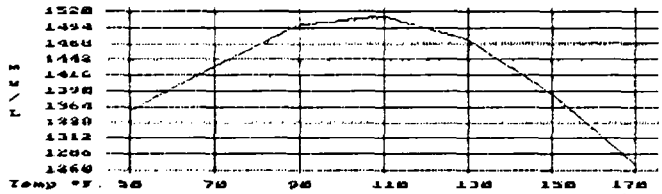
ANALYSIS

1.	pH		**9.090**		
2.	Specific Gravity 60/60 F.		**1.003**		
3.	$CaCO_3$ Saturation Index	@ 80 F.	**+0.906**		
		@ 140 F.	**+1.606**		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		**Not Present**		
5.	Carbon Dioxide		**Not Determined**		
6.	Dissolved Oxygen		**Not Determined**		
	Cations				
7.	Calcium (Ca^{++})		**10**	/ 20.1 =	**0.50**
8.	Magnesium (Mg^{++})		**6**	/ 12.2 =	**0.49**
9.	Sodium (Na^{+})	(Calculated)	**348**	/ 23.0 =	**15.13**
10.	Barium (Ba^{++})		**Below 10**	**(6)**	
	Anions				
11.	Hydroxyl (OH^{-})		**0**	/ 17.0 =	**0.00**
12.	Carbonate ($CO_3^{=}$)		**77**	/ 30.0 =	**2.57**
13.	Bicarbonate (HCO_3^{-})		**259**	/ 61.1 =	**4.24**
14.	Sulfate ($SO_4^{=}$)		**165**	/ 48.8 =	**3.38**
15.	Chloride (Cl^{-})		**300**	/ 35.5 =	**8.45**
16.	Total Dissolved Solids		**1,088**		
17.	Total Iron (Fe)		**1**	/ 18.2 =	**0.05**
18.	Total Hardness As $CaCO_3$		**50**		
19.	Resistivity @ 75 F. (Calculated)		**2.963** /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	0.50	40
$CaSO_4$	68.07	0.00	0
$CaCl_2$	55.50	0.00	0
$Mg(HCO_3)_2$	73.17	0.49	36
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	0.00	0
$NaHCO_3$	84.00	3.25	273
$NaSO_4$	71.03	3.38	240
NaCl	58.46	8.45	494

***Milli Equivalents per Liter**

This water is somewhat corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

EXHIBIT "H"

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:
DASCO Land Corporation
P.O. Box 947
Hobbs, NM 88241

4a. Article Number
Z 106 613 679

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

7. Date of Delivery
1/9/96

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form 3811 December 1991 ☆U.S. GPO: 1993—352-714 **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:
Yates Petroleum
105 S. 4th Street
Artesia, NM 88210

4a. Article Number
Z 106 613 682

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

7. Date of Delivery
JAN 8 1996

5. Signature (Addressee)
SGRIGGS

6. Signature (Agent)

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

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

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:
Santa Fe Energy
550 West Texas
Midland, TX 79701

4a. Article Number
Z 106 613 681

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

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **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:
NM State Land Office
P.O. Box 1148
Santa Fe, NM 87504-1148

4a. Article Number
Z 106 613 678

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

7. Date of Delivery
JAN 16 1996

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form 3811 December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

EXHIBIT "I"

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

General Manager

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

of _____

1 weeks.

Beginning with the issue dated

January 5, 1996

and ending with the issue dated

January 5, 1996

Sandra Catlett for
Kathi Bearden
General Manager

Sworn and subscribed to before

me this 11th day of

January, 1996

Marilyn F. Ruffner
Notary Public.

My Commission expires
March 24, 1998
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE
JANUARY 5, 1996

TOCO, L.L.C., P.O. Box 888, Hobbs, NM, 88241, (505) 392-7050, (Debbie McKelvey - Agent), is making application with the Oil Conservation Division for salt water disposal in the San Andres formation in the open hole section 5,196' - 5,390' in the Morse "A: #1, located 660' FNL & 660' FEL of Sec. 28, T10S, R37E, Lea County, NM. Maximum injection rate is 1000 barrels of water per day at a maximum pressure of 500 psig. Interested parties must file any objection with the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, NM, 87505, within 15 days.
#14325

EXHIBIT "J"