SAMEDAN OIL CORPORATION
10 DESTA DRIVE
SUITE 240 EAST
MIDLAND, TEXAS 79705
(915) 688-3660

March 11, 1986

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Application for Authorization
to Inject (Form C-108)

Dear Sir:

Samedan Oil Corporation is submitting (Form C-108) Application for Authorization to Inject, along with all necessary attachments.

Should any questions arise concerning the information provided, please contact this office.

Yours truly,

Nick Hood

Nick Hood
Engineer

GNH:ak

Enclosures

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: Samedan Oil Corporation

Address: 10 Desta Drive, Suite 240 East, Midland, Texas 79705

Contact party: Nick Hood Phone: 915/688-3360

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: Nick Hood Title Engineer

Signature: Nick Hood Date: February 17, 1986

* 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.

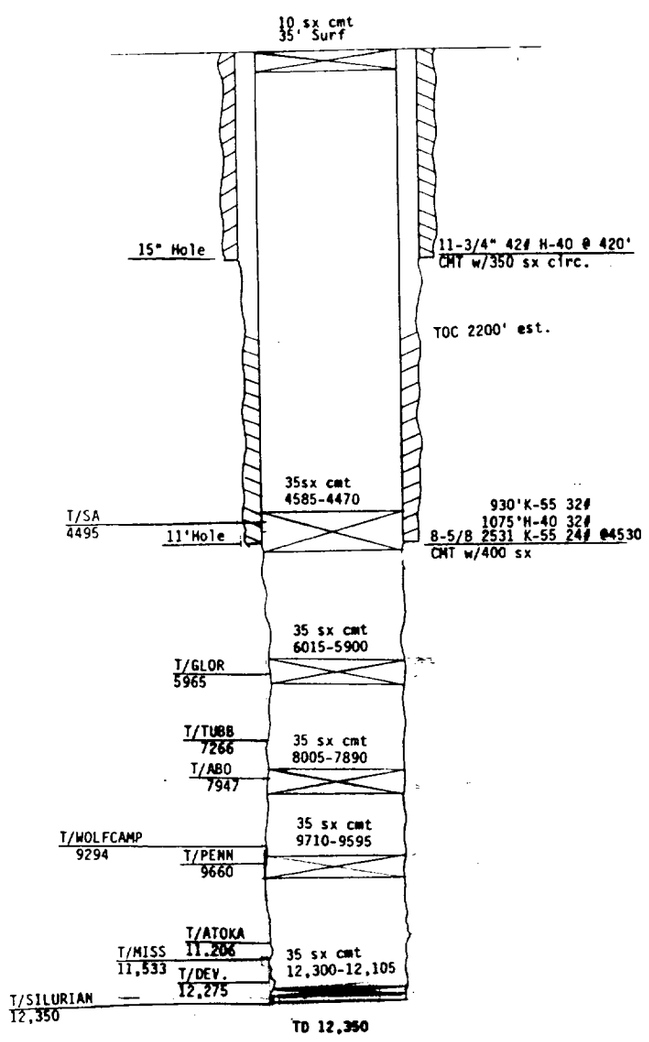
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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.

INJECTION WELL DATA SHEET

Samedan	Speight			
OPERATOR	LEASE			
SWD #1	1986' FNL 660' FEL	3	13S	37E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 11-3/4" Cemented with 350 sx.

TOC Surface feet determined by Visual

Hole size 15"

Intermediate Casing None

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 8-5/8" Cemented with 400 sx.

TOC 2200 feet determined by Calculated

Hole size 11"

Total depth 4530

Injection interval

4530 feet to 5900 feet open hole

(perforated or open-hole, indicate which)

Note: Injection interval 4530-5900 is open hole

Tubing size 2-3/8 lined with AMF TK75 (material) set in a

Baker 'AD-1' Tension (brand and model) packer at 4300 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) None

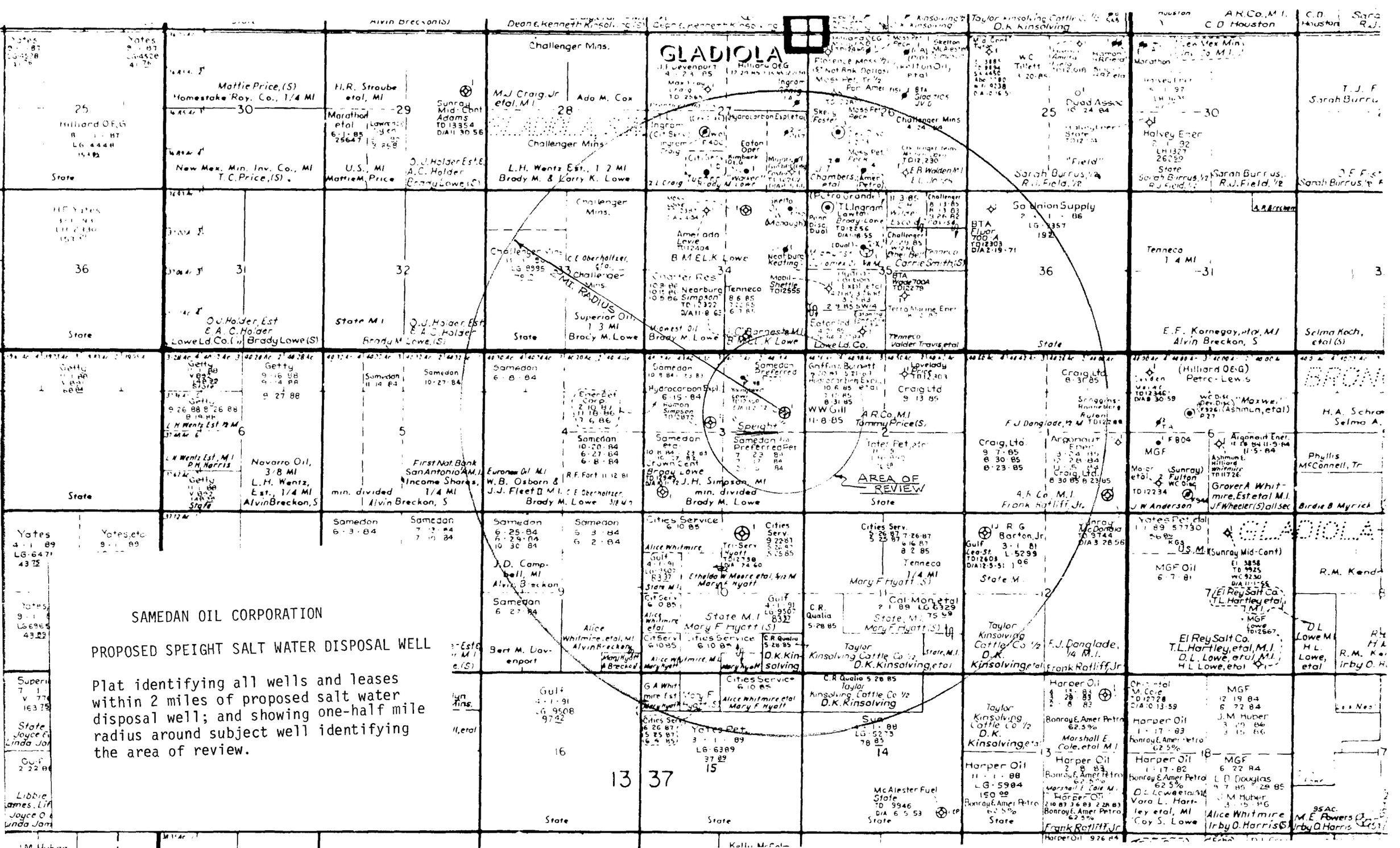
3. Is this a new well drilled for injection? /_/ Yes /X/ No

   If no, for what purpose was the well originally drilled? Silurian Test - Unsuccessful

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

   well has never been perforated. P&A'd as shown in schematic.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) this area. N. King Devonian (Top-8186) Top of San Andres Injection zone (-593)

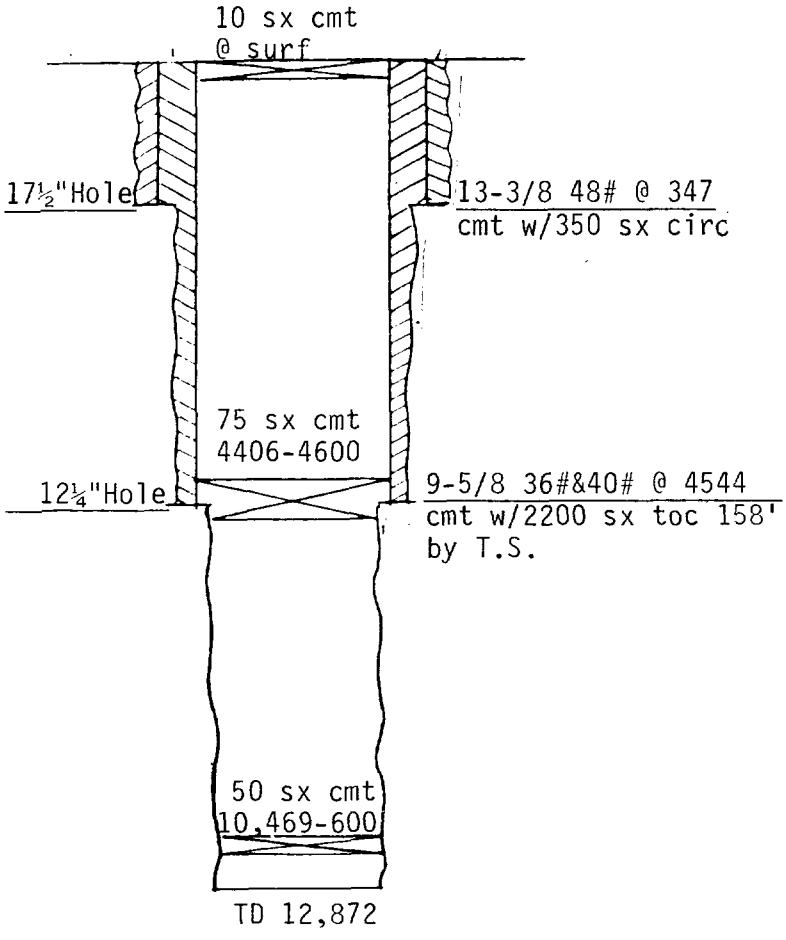

GLADIOLA
Challenger Mins.
Challenger Mins
Tenneco
1 4 MI
-31
Mattie Price,(S)
Homestake Roy. Co., 1/4 MI
New Mex. Min. Inv. Co., MI
T.C.Price,(S)
H.R. Stroube
etal, MI
Marathon
etal
U.S., MI
MattieM. Price
Sunray
Mid-Cont
Adams
TD 13354
D/A11 30 56
O.J.Holder Est.&
A.C. Holder
Peggy Lowe,(S)
M.J Craig Jr
etal, MI
Ado M. Cox
L.H. Wentz Est., 1 2 MI
Brady M. & Kerry K. Lowe
Hilliard OE,G
Ingram
Eaton
Kimbark
Hydrocarbon Expl.etal
Ameredo
Lewe
TD12404
B.M.E.L.K Lowe
Nearburg
keating
Charter Res
Nearburg
Simpson
TD 12322
D/A11-8-83
Tenneco
8-6-85
Monest Oil
Brady M. Lowe
C.E. Oberholtzer,
etal
Challenger
Mins.
LG 8595
MI. RADIUS
Superior Oil
1 3 MI
Brady M. Lowe
Florence Moss Pet
(S) Nat Bk Nation
Moss Pet. Tr ½
Pan Amer Pet
Skelton Oil,
etal
BTA
Gloc 7105
JV O
Moss Pet
Peck
Chambers,
etal
Amer. Petro
E.B Walden MI
E. Jones
Challenger Mins
4 24 84
Challenger
Tenneco
Carrie Smith,(S)
T.L Ingram
Lawton
Brady Lowe
TD 12256
D/A 11-8-85
Escoe
Terra Marine Ener
Eatonfield
Lowe Ld. Co.
Valder Travis,etal
W.C Tillett
4 20 85
Quad Assoc
10 24 84
"Field"
Sarah Burrus,½
R.J. Field, ½
Sa Union Supply
LG 9357
192
BTA
Fluor
700 A
TD12303
D/A 2-19-71
Marathon
Halvey Ener
2 92
LH 1327
26259
State
Sarah Burrus,½
R.J. Field, ½
T. J. F
Sarah Burru
O.F. Fist
Sarah Burrus,½ F
E.F. Kornegay,etal, MI
Alvin Breckon, S
Selma Koch,
etal (S)
Getty
9 16 88
9 27 88
Navarro Oil,
3/8 MI
L.H. Wentz,
Est., 1/4 MI
Alvin Breckon, S
First Nat. Bank
San Antonio A.M.I.
Income Shares,
1/4 MI
min. divided
Alvin Breckon, S
Samedon
10-27-84
Samedon
6-8-84
Samedon
10-20-84
6-27-84
6-8-84
R.F. Fort 11 12 81
Euronex Oil MI
W.B. Osborn &
J.J. Fleet MI
Brady M. Lowe
J.H. Simpson, MI
min. divided
Brady M. Lowe
Samedon
Preferred
Speight
Samedon
Preferred
Pet
AREA OF
REVIEW
Griffin Burnett
Hydrocarbon Expl.
WW Gill
11-8-85
A.R.Co.M.I
Tommy Price(S,
Lovelady
Craig Ltd
9 13 86
Craig Ltd
8-3-85
Scroggins-
Hannebery
Ryland
TD12288
F.J. Danglade,½ M
Craig, Ltd.
9 7-85
8 30 85
8-23-85
Argonaut Ener.
11-5-84
Craig, Ltd.
8 30 85 8 23 85
A.R.Co. M.I.
Frank Ratliff Jr.
(Hilliard OE,G)
Petre-Lewis
Golden
TD12346
D/A8 30 59
W.C Disc
(Dev.Disc)
"Maxwell"
(Ashmun, etal)
MGF
Major
(Sunray)
etal
Fulton
TD12234
J.W Anderson
Argonaut Ener.
Ashmun E.
Hilliard
Whitmire
TD11726
Grover A Whit-
mire, Est etal M.I.
J.F Wheeler(S) all sec
Yates Pet etal
1 1 89 577 30
56 80
KGS
U.S. M.
MGF Oil
6-7-81
(Sunray Mid-Cont)
El 3858
TD 9925
WC 9230
D/A 11-5-84
(El Rey Salt Co.
T.L. Hartley etal)
7 MI
MGF
Lowe
TD12567
El Rey Salt Co.
T.L.Hartley, etal, M.I.
D.L. Lowe, etal, M.I.
H.L Lowe, etal
GLADIOLA
R.M. Kend
D.L
Lowe M
H.L.
Lowe,
etal
R.M. Kend
Irby O. H
BRONC
H.A. Schro
Selma A.
Phyllis
McConnell, Tr
Birdie B Myrick
Yates
4-1-89
LG-6471
43 75
Yates,etc
9-1-89
Yates
9-1-89
LG 6965
43 89
Superi
7-1-
V 77
163 75
State
Joyce E
Linda Jo
Gulf
2 22 86
Libbie
ames, Lil
Joyce O.
Linda Jam
SAMEDAN OIL CORPORATION
PROPOSED SPEIGHT SALT WATER DISPOSAL WELL
Plat identifying all wells and leases within 2 miles of proposed salt water disposal well; and showing one-half mile radius around subject well identifying the area of review.
Samedon
6-3-84
Samedon
7-3-84
7-10-84
Samedon
6-25-84
6-29-84
10-30-84
J.D. Camp-
bell, MI
Alvin Breckon
Samedon
6-27-84
Samedon
6-3-84
6-2-84
Bert M. Davenport
Alice
Whitmire, etal, MI
Alvin Breckon
Gulf
4-1-91
LG 9508
9742
16
13
State
Cities Service
6-10-85
Alice Whitmire
Gulf
4-1-91
LG 9507
8337
State M.I
Cities
Serv
9 22 87
5 25 87
5 25 85
Tri-Serv
Hyatt
TD12758
D/A 7-4-60
Ethelda W Moore etal, 1/2 M
Mary F Hyatt
Cit Serv
6-10-85
Alice Whitmire etal
Cities Service
6-10-85
State M.I
Mary F Hyatt (S)
Gulf
4-1-91
LG 9507
8337
Cities Service
6-10-85
Alice Whitmire, etal
Mary F Hyatt
G.A Whit-
mire Est
Mary F
Hyatt
Cities Serv
6 26 87
5 25 87
6-9-85
Yates Pet
3-1-89
LG-6389
37 89
15
37
State
Cities Service
6-10-85
Alice Whitmire etal
Mary F Hyatt
Cities
Serv
5 26 87 7-26-87
5 25 87 6-16-87
8 2 85
Tenneco
1/4 MI
Mary F Hyatt (S)
C.R.
Qualia
5-28-85
Cal-Mon etal
2-1-89 LG 6329
State, M.I. 75 89
Mary F Hyatt (S)
C.R Qualia 5 28 85
Taylor
Kinsolving Cattle Co ½
D.K. Kinsolving, etal
C.R Qualia 5 28 85
Taylor
Kinsolving Cattle Co ½
D.K.Kinsolving
Sun
4-1-88
LG-5273
78 85
14
McAlester Fuel
State
TD 9946
D/A 6-5-53
State
J R G
Barton, Jr.
Gulf
3-1-81
L-5299
Lea-St.
TD12603
D/A 12-5-51
1 06
State M.
Taylor
Kinsolving
Cattle Co ½
D.K.
Kinsolving, etal
F.J. Danglade,
¼ M.I.
Frank Ratliff Jr
Taylor
Kinsolving
Cattle Co ½
D.K.
Kinsolving, etal
Harper Oil
11-1-88
LG-5984
150 00
Bonray E. Amer Petro
62.5%
State
Harper Oil
1 28 83
Bonray E. Amer Petro
62.5%
Marshall E.
Cole, etal M.I
Harper Oil
2 8 83
Bonray E. Amer Petro
62.5%
Marshall E. Cole M.I.
Harper Oil
2 10 83 3 6 83 2 28 83
Bonray E. Amer Petro
62.5%
Frank Ratliff Jr
Harper Oil 9 26 84
Chr etal
M. Coe
TD 12728
D/A 10 13 59
Harper Oil
1-17-83
Bonray E. Amer Petro
62.5%
Harper Oil
1-17-82
Bonray E. Amer Petro
62.5%
D.L Lowe etal MI
Vara L. Hart-
ley etal, MI
Coy S. Lowe
MGF
12 19 84
6 22 84
J.M. Huber
3 29 86
3 15 86
MGF
6 22 84
L.D Douglas
9 7 85 9 29 85
J.M Huber
3-15-86
Alice Whitmire
Irby O. Harris(S)
95 AC.
M.E. Powers
Irby O. Harris
Irby O. Harris(S)

AREA OF REVIEW WELL DATA SHEET

Jake L. Hamon	J. H. Simpson			
OPERATOR	LEASE			
1	2310' FWL 2314' FNL	3	13S	37E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Spud Date 8-19-52 P&A 1-3-53 Re-entry Aug. 1956 P&A Aug. 27, 1956

SCHEMATIC



TABULAR DATA

Surface Casing

Size 13-3/8", Cmtd w/ 350 sx.

TOC Surface ft. as per circulated

Hole size 17½ "

Intermediate Casing

Size 9-5/8", Cmtd w/ 2200 SX.

TOC 158' ft. as per Temp. Surv.

Hole size 12¼ "

Long string Well P & A'd no long string set

Size _____, Cmtd w/_____sx.

TOC _____ft. as per _____

Hole size _____"

Liner

Size _____", from _____'to_____

Cmtd. w/_____sx, TOC_____

Hole size _____"

Total Depth _____

Other Data

1. Name of Field or Pool (if applicable) None

2. Is this a new well drilled for injection ____Yes x No
If no, for what purpose was the well originally drilled? Devonian Test Unsucessful

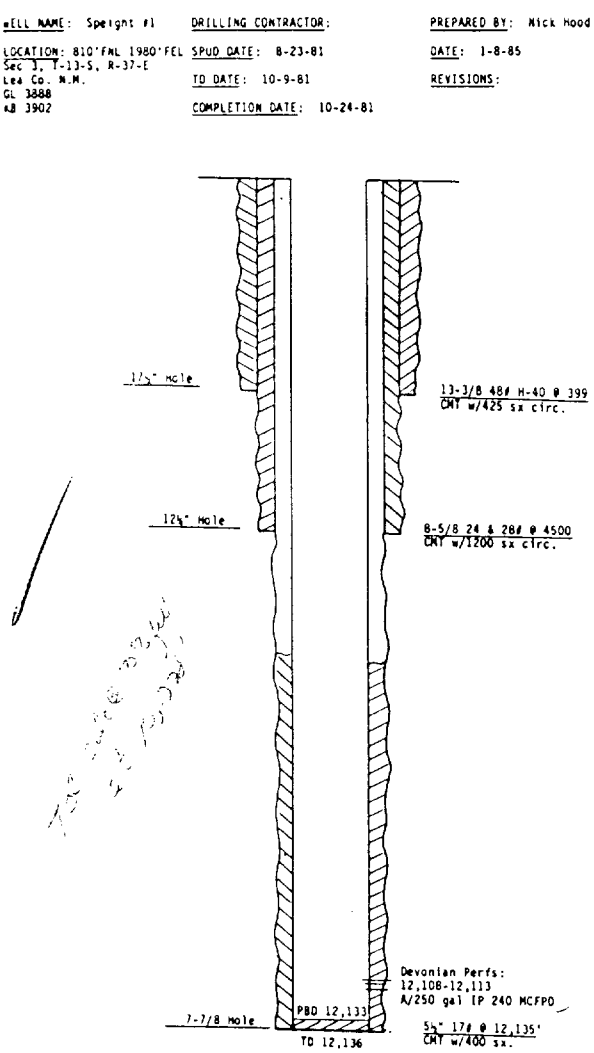
3. Has the well ever been perforated in any other zone (s) ? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug (s) used) None

EA OF REVIEW WELL DATA SH T

Samedan	Speight			
OPERATOR	LEASE			
1	810' FNL & 1980' FEL	3	13-S	37E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Lea County, New Mexico

SCHEMATIC



TABULAR DATA

Surface Casing

Size 13-3/8 , Cmtd w/ 425 sx.

TOC Circ ft. as per drilling rpt.

Hole size 17-1/2 "

Intermediate Casing

Size 8-5/8 , Cmtd w/ 400 SX.

TOC surf ft. as per drilling report

Hole size 12-1/4 "

Long string

Size 5-1/2 , Cmtd w/ 400 sx.

TOC unknown ft. as per _____

Hole size 7-7/8 "

Liner NONE

Size _____", from _____'to _____

Cmtd. w/_____sx, TOC _____

Hole size _____"

Total Depth _____

1. Name of Field or Pool (if applicable) North King Devonian

2. Is this a new well drilled for injection ____ Yes X No
   If no, for what purpose was the well originally drilled? Devonian Test

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

OPERATIONS DATA SHEET

SECTION VII - DATA ON THE PROPOSED SPEIGHT

SALT WATER DISPOSAL OPERATION IS AS FOLLOWS:

1) Proposed average daily rate of produced water injection - 2000 BWPD

   Proposed maximum daily rate of produced water injection - 3000 BWPD

   Monthly volumes estimated @ 60,000 - 90,000 barrels

2) The proposed system would be open

3) The proposed average and maximum injection pressures are estimated to be in the range of 600 to 1200 PSIG at the triplex pump.

4) The primary source of injected fluid will be produced water from the N. King Devonian Field of Lea County, New Mexico and other nearby Devonian Production. A San Andres section will be the receiving formation. The bulk of the water (approx. 80% to 90%) will be produced Devonian water being re-injected into the San Andres formation. Chemical analysis of water from the San Andres and Devonian reservoirs involved are submitted herewith.

5) The proposed water injection is for disposal purposes into the San Andres section of an abandoned dry hole. There is no San Andres production within one mile of the proposed disposal well. The chemical analysis of the San Andres referred to in #4 above are representative of the proposed injection zone.

PRODUCTION CHEMICALS

PRO - KEM, INC.

P. O. BOX 1506 - [505] 396-7433

Lovington, New Mexico 88260

API WATER ANALYSIS REPORT FORM

Company	Sample No.	Date Sampled
SAMEDAN		8-2-84

Field	Legal Description	County or Parish	State

Lease or Unit	Well	Depth	Formation	Water, B/D
Speight	# 1			

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
Produced	Well head	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	15104	657
Calcium, Ca	2000	100
Magnesium, Mg	1464	120
Barium, Ba	N/D	N/D

ANIONS		
Chloride, Cl	30534	860
Sulfate, SO_4	386	8
Carbonate, CO_3	0	0
Bicarbonate, HCO_3	523	9

Total Dissolved Solids (calc.) 50010

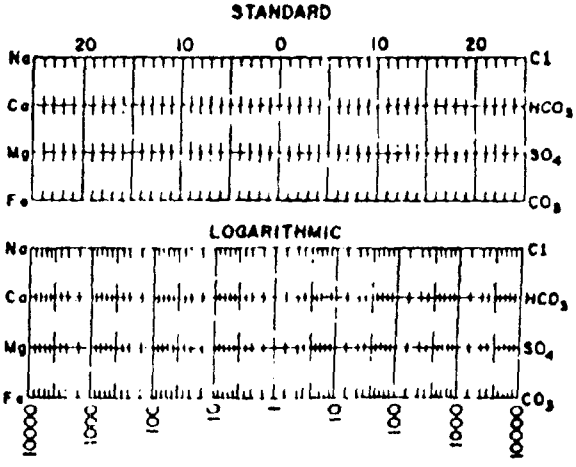
Iron, Fe (total) 3.00

Sulfide, as H_2S Nil

OTHER PROPERTIES

pH	7.05
Specific Gravity, 60/60 F.	1.035
Resistivity (ohm-meters) 77° F.	0.173
Total Hardness, $CaCO_3$	11000
Total Alkalinity, $CaCO_3$	
Supersaturation, $CaCO_3$	

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

Calcium Sulfate scaling potential - Nil

Calcium Carbonate stability index:

80°F = 0.240

140°F = 1.092

ION

YOUR EXT. NO.

THE WESTERN COMPANY

WATER ANALYSIS

ANALYSIS NO.

GENERAL INFORMATION

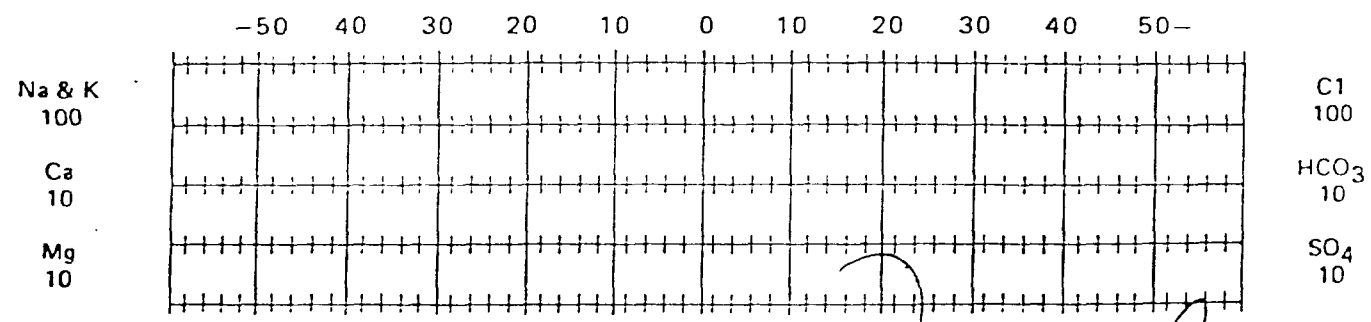
OPERATOR	Cooley & Holcomb	DATE SAMPLED	2-17-65
WELL	Byers #1	DATE RECEIVED	
FIELD	Sawyer San Andres	SUBMITTED BY	
FORMATION	San Andres	WORKED BY	
COUNTY	Lea	SAMPLE DESCRIPTION:	10,000 cal/called DS-3
STATE	~~Texas~~ N. M.		
DEPTH			

PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY	1.150 AT 70 °F		TOTAL DISSOLVED SOLIDS		PPM
pH	6.6		RESISTIVITY		PPM
IRON	no trace		SULFATE	1,290	PPM
HYDROGEN SULFIDE	very strong trace		BICARBONATE	634	PPM
HARDNESS			CHLORIDE	127,100	PPM
CALCIUM	12,100		SODIUM CHLORIDE		PPM
MAGNESIUM	5,250	PPM	SODIUM		PPM
SODIUM & POTASSIUM	59,400	PPM	POTASSIUM		PPM
PHOSPHATE					

REMARKS:

for Stiff type plot (in meq./1.)



WATER ANALYSIS

FIELD: Vacuum San Andres

FORMATION: San Andres

COUNTY: Lea

STATE: New Mexico

SPECIFIC GRAVITY	1.139
pH	6.6
IRON	NIL
CALCIUM	2120
MAGNESIUM	898 PPM
RESISTIVITY	.05@74 deg F
SULFATE	3400 PPM
BICARBONATE	165 PPM
CHLORIDE	123,000PPM

SECTION II GEOLOGICAL DATA ON INJECTE ONE

Section VIII - The San Andres formation in the proposed injection well is 1480 feet in vertical thickness with the top at 4485 feet and the base at 5965 feet. The lithology is predominately a carbonate with anhydrite stringers in the upper most portion of the section. The San Andres is of Permian age with the deposits accumulating on a marine carbonate depositional shelf. The only underground source of drinking water with total dissolved solids concentrations of 10,000 mg/l or less is the Ogallala formation, occurring at depths of 100 to 300 feet from the surface. There is no known source of drinking water underlying the San Andres.

SECTION IX PROPOSED STIMULATION PROGRAM

All stimulation & treating of the proposed injection zone will be recommended based on information of actual injection tests which will be performed during the re-entry of the well. This will allow more efficient & cost effective treatment of the well.

SECTION X LOGGING & TEST DATA

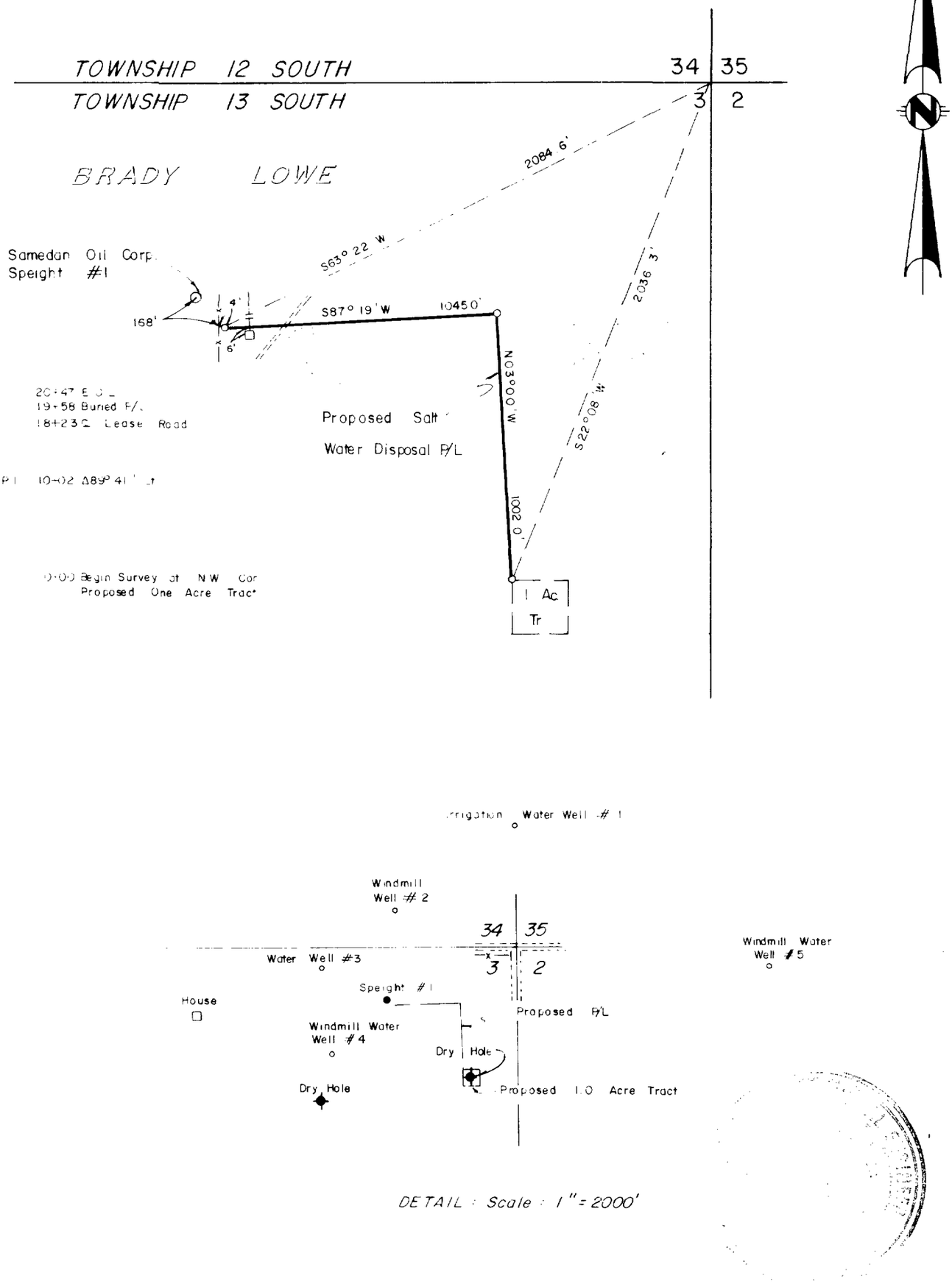
Logs for the proposed disposal well are attached.

SECTION XI ANALYSIS OF FRESH WATER

A plat identifying water wells and their location is attached, along with water analysis of samples from these wells.

87948

SECTION 3, TOWNSHIP 13 SOUTH, RANGE 37 EAST, N.M.P.M.
LEA COUNTY, NEW MEXICO



DETAIL : Scale : 1" = 2000'

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD BY A REGULAR SURVEY MADE UNDER MY SUPERVISION, AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOHN W. WEST, NM PE & LS No. 676
TEXAS RPS No. 1138

SAMEDAN OIL CORPORATION

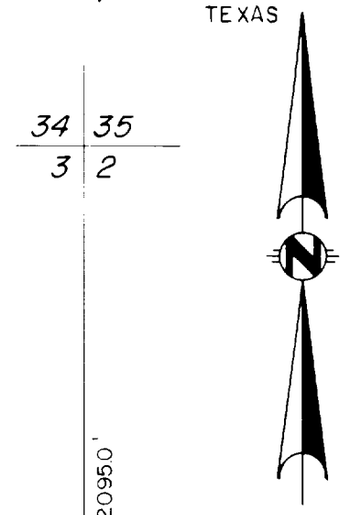
PROPOSED SALT WATER DISPOSAL PIPELINE CROSSING THE LANDS OF BRADY LOWE IN SECTION 3, TOWNSHIP 13 SOUTH, RANGE 37 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS HOBBS, NEW MEXICO

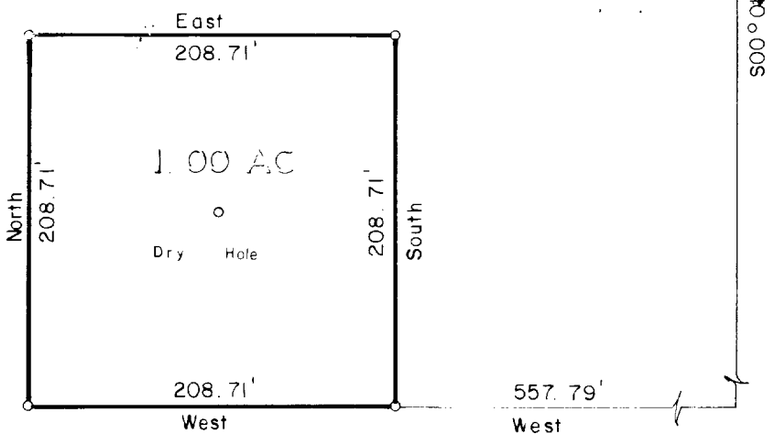
Scale: 1"=500'		Drawn By: C. BASS
Date: 12/8/84	ck.	Sheet 1 of Sheet 2

87948

SECTION 3, TOWNSHIP 13 SOUTH, RANGE 37 EAST, N. M. P. M.
LEA COUNTY, TEXAS



Proposed SWD Well Location



LEGAL DESCRIPTION

A TRACT OF LAND SITUATE WITHIN THE NORTHEAST QUARTER OF SECTION 3, TOWNSHIP 13 SOUTH, RANGE 37 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH IS LOCATED S00°01'W, 2095.0 FEET AND WEST, 557.79 FEET FROM THE NORTHEAST QUARTER OF SAID SECTION 3; THENCE WEST, 208.71 FEET; THENCE NORTH, 208.71 FEET; THENCE EAST, 208.71 FEET; THENCE SOUTH, 208.71 FEET TO THE POINT OF BEGINNING AND CONTAINING 1.00 ACRE, MORE OR LESS.

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION, AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOHN W. WEST, NM PE & LS No. 676
TEXAS RPS No. 1138
RONALD J. EIDSON, NM LS No. 3239
TEXAS RPS No. 1883

SAMEDAN OIL CORPORATION

PROPOSED 1.00 ACRE TRACT SITUATE WITHIN THE NORTHEAST QUARTER OF SECTION 3, TOWNSHIP 13 SOUTH, RANGE 37 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS HOBBS, NEW MEXICO

Scale: 1"=100'		Drawn By: C. BASS	
Date: 12/10/84	Ck. J. E.	Sheet 1 of 1	Sheets

WATER ANALYSIS REPORT

SAMPLE

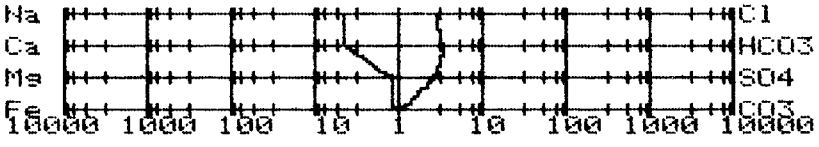
LOCATION: N.W. PASTURE IRR. DATE: 1-DEC-1984
COMPANY : PRO-KEM INC. FORMATION _____
REF. : SAMEDAN OIL CO.
REMARKS : _____

ANALYSIS

		MG/L	EQ. WT.	*MEQ/L
1.	PH	8.10		
2.	SPECIFIC GRAVITY	1.005		
3.	HYDROGEN SULFIDE	NEGATIVE		
4.	CARBON DIOXIDE	NOT DETERMINED		
5.	DISSOLVED OXYGEN	NOT DETERMINED		
6.	BICARBONATE (HCO3)	195	/ 61.1 =	3
7.	CHLORIDES (CL)	100	/ 35.5 =	3
8.	SULFATES (SO4)	125	/ 48.8 =	3
9.	CALCIUM (CA)	77	/ 20.1 =	4
10.	MAGNESIUM (MG)	12	/ 12.2 =	1
11.	SODIUM (NA)	87	/ 23.0 =	4
12.	BARIUM (BA)	0	/ 68.7 =	0
13.	TOTAL IRON (FE)	0		
14.	TOTAL DISSOLVED SOLIDS	596		
15.	TOTAL HARDNESS (CACO3)	239		

LOGARITHMIC WATER PATTERN

MEQ/L



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *MEQ/L =	MG/L
CA(HCO3)2	81.04	3	243
CASO4	68.07	1	68
CACL2	55.50	0	0
MG(HCO3)	73.17	0	0
MGSO4	60.19	1	60
MGCL2	47.62	0	0
NAHCO3	84.00	0	0
NASO4	71.03	1	71
NACL	58.46	3	175

*MILLI EQUIVALENTS PER LITER

CALCIUM SULFATE SCALING POTENTIAL IS NOT PRESENT

ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 56 DEGREES F.

REMARKS _____

Noted as irrigation water well #1 on plat.

NOTE: TD of Well - Unknown at this time
Water Table - Unknown at this time

WATER ANALYSIS REPORT

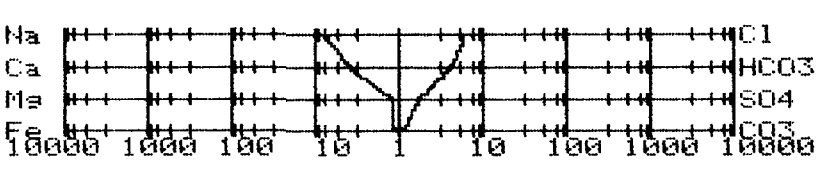
SAMPLE

LOCATION: T. PRICE WINDMILL DATE: 1-DEC-1984
COMPANY : PRO-KEM INC. FORMATION _____
REF. : SAMEDAN OIL CO.
REMARKS : _____

ANALYSIS

		MG/L	EQ. WT.	*MEQ/L
1.	PH	7.89		
2.	SPECIFIC GRAVITY	1.010		
3.	HYDROGEN SULFIDE	NEGATIVE		
4.	CARBON DIOXIDE	NOT DETERMINED		
5.	DISSOLVED OXYGEN	NOT DETERMINED		
6.	BICARBONATE (HCO3)	234	/ 61.1 =	4
7.	CHLORIDES (CL)	200	/ 35.5 =	6
8.	SULFATES (SO4)	75	/ 48.8 =	2
9.	CALCIUM (CA)	67	/ 20.1 =	3
10.	MAGNESIUM (MG)	12	/ 12.2 =	1
11.	SODIUM (NA)	154	/ 23.0 =	7
12.	BARIUM (BA)	0	/ 68.7 =	0
13.	TOTAL IRON (FE)	0		
14.	TOTAL DISSOLVED SOLIDS	742		
15.	TOTAL HARDNESS (CACO3)	215		

LOGARITHMIC WATER PATTERN



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *MEQ/L =	MG/L
CA(HCO3)2	81.04	3	243
CASO4	68.07	0	0
CACL2	55.50	0	0
MG(HCO3)	73.17	0	0
MGSO4	60.19	0	0
MGCL2	47.62	0	0
NAHCO3	84.00	0	0
NASO4	71.03	1	71
NACL	58.46	6	351

*MILLI EQUIVALENTS PER LITER
CALCIUM SULFATE SCALING POTENTIAL IS NOT PRESENT
ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 58 DEGREES F.
REMARKS _____
Noted as Windmill well #2 on plat.

NOTE: TD of Well - 60'
Water Table - 38' from surface

WATER ANALYSIS REPORT

SAMPLE

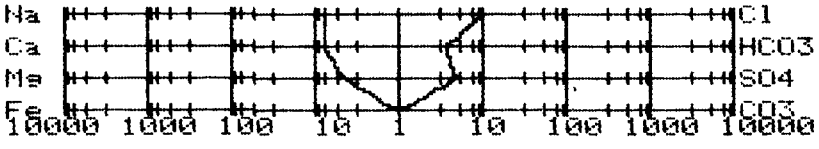
LOCATION: RANCH HOUSE WELL DATE: 1-DEC-1984
COMPANY : PRO-KEM INC. FORMATION _____
REF. : SAMEDAN OIL CO.
REMARKS : _____

ANALYSIS

			MG/L		EQ. WT.		*MEQ/L
1.	PH	7.62					
2.	SPECIFIC GRAVITY	1.006					
3.	HYDROGEN SULFIDE	NEGATIVE					
4.	CARBON DIOXIDE	NOT DETERMINED					
5.	DISSOLVED OXYGEN	NOT DETERMINED					
6.	BICARBONATE (HCO3)		229	/	61.1	=	4
7.	CHLORIDES (CL)		300	/	35.5	=	8
8.	SULFATES (SO4)		225	/	48.8	=	5
9.	CALCIUM (CA)		134	/	20.1	=	7
10.	MAGNESIUM (MG)		46	/	12.2	=	4
11.	SODIUM (NA)		147	/	23.0	=	6
12.	BARIUM (BA)		0	/	68.7	=	0
13.	TOTAL IRON (FE)		0				
14.	TOTAL DISSOLVED SOLIDS		1081				
15.	TOTAL HARDNESS (CACO3)		525				

LOGARITHMIC WATER PATTERN

MEQ/L



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *MEQ/L =	MG/L
CA(HCO3)2	81.04	4	324
CASO4	68.07	3	204
CACL2	55.50	0	0
MG(HCO3)	73.17	0	0
MGSO4	60.19	2	120
MGCL2	47.62	2	95
NAHCO3	84.00	0	0
NASO4	71.03	0	0
NACL	58.46	6	351

*MILLI EQUIVALENTS PER LITER

CALCIUM SULFATE SCALING POTENTIAL IS NOT PRESENT

ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 59 DEGREES F.

REMARKS _____

Noted as water well #3 on plat.

NOTE: TD of Well - 65'
Water Table - 38' from surface

WATER ANALYSIS REPORT

SAMPLE

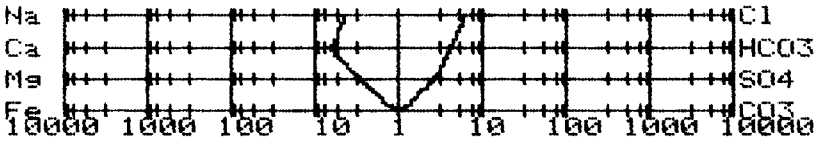
LOCATION: NW PAST SO WINDMILL DATE: 1-DEC-1984
COMPANY : PRO-KEM INC. FORMATION _____
REF. : SAMEDAN OIL CO.
REMARKS : _____

ANALYSIS

			MG/L	EQ. WT.	*MEQ/L
1.	PH	8.24			
2.	SPECIFIC GRAVITY	1.008			
3.	HYDROGEN SULFIDE	NEGATIVE			
4.	CARBON DIOXIDE	NOT DETERMINED			
5.	DISSOLVED OXYGEN	NOT DETERMINED			
6.	BICARBONATE (HCO3)		234	/ 61.1 =	4
7.	CHLORIDES (CL)		200	/ 35.5 =	6
8.	SULFATES (SO4)		125	/ 48.8 =	3
9.	CALCIUM (CA)		115	/ 20.1 =	6
10.	MAGNESIUM (MG)		29	/ 12.2 =	2
11.	SODIUM (NA)		91	/ 23.0 =	4
12.	BARIUM (BA)		0	/ 68.7 =	0
13.	TOTAL IRON (FE)		0		
14.	TOTAL DISSOLVED SOLIDS		794		
15.	TOTAL HARDNESS (CACO3)		406		

LOGARITHMIC WATER PATTERN

MEQ/L



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *MEQ/L =	MG/L
CA(HCO3)2	81.04	4	324
CASO4	68.07	2	136
CACL2	55.50	0	0
MG(HCO3)	73.17	0	0
MGSO4	60.19	1	60
MGCL2	47.62	2	95
NAHCO3	84.00	0	0
NASO4	71.03	0	0
NACL	58.46	4	234

*MILLI EQUIVALENTS PER LITER

CALCIUM SULFATE SCALING POTENTIAL IS NOT PRESENT

ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 55 DEGREES F.

REMARKS _____
Noted as Windmill water well #4 on plat.

NOTE: TD of Well - 60'
Water Table - 38' from surface

WATER ANALYSIS REPORT

SAMPLE

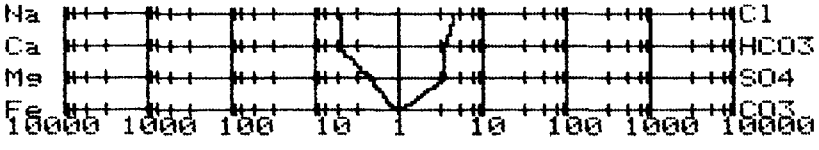
LOCATION: EAST PAST WINDMILL DATE: 1-DEC-1984
COMPANY : PRO-KEM INC. FORMATION _____
REF. : SAMEDAN OIL CO.
REMARKS : _____

ANALYSIS

		MG/L	EQ. WT.	*MEQ/L
1.	PH	7.55		
2.	SPECIFIC GRAVITY	1.002		
3.	HYDROGEN SULFIDE	NEGATIVE		
4.	CARBON DIOXIDE	NOT DETERMINED		
5.	DISSOLVED OXYGEN	NOT DETERMINED		
6.	BICARBONATE (HCO3)	205	/ 61.1 =	3
7.	CHLORIDES (CL)	150	/ 35.5 =	4
8.	SULFATES (SO4)	155	/ 48.8 =	3
9.	CALCIUM (CA)	96	/ 20.1 =	5
10.	MAGNESIUM (MG)	23	/ 12.2 =	2
11.	SODIUM (NA)	95	/ 23.0 =	4
12.	BARIUM (BA)	0	/ 68.7 =	0
13.	TOTAL IRON (FE)	0		
14.	TOTAL DISSOLVED SOLIDS	724		
15.	TOTAL HARDNESS (CACO3)	334		

LOGARITHMIC WATER PATTERN

MEQ/L



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *MEQ/L	= MG/L
CA(HCO3)2	81.04	3	243
CASO4	68.07	1	68
CACL2	55.50	0	0
MG(HCO3)	73.17	0	0
MGSO4	60.19	2	120
MGCL2	47.62	0	0
NAHCO3	84.00	0	0
NASO4	71.03	0	0
NACL	58.46	4	234

*MILLI EQUIVALENTS PER LITER
CALCIUM SULFATE SCALING POTENTIAL IS NOT PRESENT
ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 60 DEGREES F.
REMARKS _____
Noted as Windmill water well #5 on plat.

NOTE: TD of well - 60'
Water Table - 36' from surface

SECTION XII APPLICANTS AFFIRMATIVE STATEMENT

The only underground source of drinking water in this general area is the Ogallala Formation, occurring at a depth of 100 to 300 feet from the surface. The top of the San Andres Formation, proposed injection zone, is at 4495 feet. Since Permian time there has not been tectonic activity, or upheaval of any significance, that would disturb the competence or stability of the strata overlying the San Andres Formation. I have examined available geologic and engineering data of this general area and I find no evidence of open faults or any other hydrologic connection between the proposed disposal zone and any underground source of drinking water.

SECTION XIV PROOF OF NOTICE

Proof of notice of the proposed disposal well is attached.

We are attaching a list of Offset Operators and the Surface Owner to whom notification was mailed. A copy of registered mail receipts is also attached, along with a copy of correspondence mailed.

ADDRESS LIST

COPIES OF FORM C-108 FOR
SAMEDAN SPEIGHT SWD

Leasehold Operators

Tenneco Oil, Exploration & Production	7990 IH 10 West San Antonio, TX 78230
Eaton Industries	3104 Edloe, Suite 200 Houston, TX 77027
Hydrocarbon Exploration	3104 Edloe, Suite 200 Houston, TX 77027
Yates Petroleum	207 South 4th Street Artesia, New Mexico 88210
W. W. Gill	P. O. Box 3729 Midland, TX 79701

Surface Owner

Brady M. Lowe Estate	1500 Broadway, Suite 1230 Lubbock, TX 79401

AFFIDAVIT OF PUBLICATION

State of New Mexico,

County of Lea.

I, _____

Robert L. Summers

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 in a supplement thereof for a period

of _____

One weeks.

Beginning with the issue dated

February 20, 19 86

and ending with the issue dated

February 20, 19 86

Robert L. Summers
Publisher.

Sworn and subscribed to before me this 20 day of February, 1986

Vera Murphy
Notary Public

My Commission expires _____

Nov. 14, 1988

(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
February 20, 1986

Samedan Oil Corporation, 10 Desta Drive, Suite 240 East, Midland, Texas 79705, (915) 688-3660, intends to re-enter and complete as a disposal well the former Brady M. Lowe #1, 1986' FNL, and 660' FEL, Section 3, Township 13S, Range 37E, Lea County, New Mexico. Disposal will be in the San Andres Formation from 4530' to 5900' at a maximum injection rate of 3000 barrels per day, with an estimated pressure of 1000 PSIG. Interested parties must file objections or requests for a hearing with the Oil Conservation Division, PO Box 2088, Santa Fe, NM 87501 within 15 days of this notice.

SAMEDAN OIL CORPORATION
10 DESTA DRIVE
SUITE 240 EAST
MIDLAND, TEXAS 79705
(915) 688-3660

February 17, 1986

Tenneco Oil Exploration & Production
7990 IH 10 West
San Antonio, Texas 78230

Gentlemen:

Attached please find Samedan Oil Corporation's Application for Authorization to Inject (Form C-108) for the Speight #1 SWD located 1986' FNL and 660' FEL, Section 3, T-13-S, R-37-E, Lea County, New Mexico. Your copy is furnished in compliance with Section XIV of the above mentioned application. Also, for your convenience, we have attached a land map indicating the well location.

If you have any questions concerning the application, you may contact me at the above address.

Yours truly,

Nick Hood

Nick Hood
Engineer

GNH:ak

Enclosures

PS Form 3811, July 1983 447-845

SENDER: ~~Complete~~ items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Tenneco Oil Expl. + Prod.
7990 IH 10 West
San Antonio, Texas 78230

4. Type of Service:
☐ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Charles E. Carranco

7. Date of Delivery
2/20/86

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

S Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Eaton Industries
1980 Post Oak Blvd
Suite 2000
Houston, TX 77056

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P186290
203

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X P Kelley

7. Date of Delivery
2/25/86 3/4/86

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

Form 3811, July 1983 447-845

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Hydrocarbon Exploration
1980 Post Oak Blvd
Suite 2000
Houston, TX 77056

4. Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail

Article Number
P186290202

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X P Kelley

7. Date of Delivery
2/25/86 3/4/86

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Yates Petroleum
207 South 4th Street
Artesia, NM 88210

4. Type of Service:
☐ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail

Article Number

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X R. Pearson

7. Date of Delivery
2-19-86

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Brady M. Lowe Estate
1500 Broadway, Suite 1230
Lubbock, TX 79401

4. Type of Service:
☐ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail

Article Number

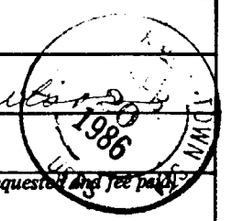
Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Ruth C. Lowe

7. Date of Delivery
2-20-86 SB

8. Addressee's Address *(ONLY if requested and fee paid)*



DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
W. W. Gill
P.O. Box 3729
Midland, Tx 79701

4. Type of Service:
☐ Registered ☐ Insured
☐ Certified ☐ COD
☐ Express Mail

Article Number

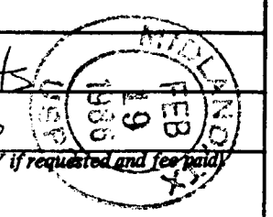
Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Becky Roberts

7. Date of Delivery
2-19-86

8. Addressee's Address *(ONLY if requested and fee paid)*



DOMESTIC RETURN RECEIPT

Mobil/Devonian/E H Jones #1/2-15-80/Heater treater

	me/l	mg/l		
Ca	109.00	2,180		
Mg	37.00	444		
Na	737.64	16,958		
Iron		0.31		
HCO_3	8.60	525		
SO_4	38.52	1,850		
Cl	836.52	29,664		
TDS		51,621	$CaSO_4$	negative 0.86
7.09 ph @ 68°F			$CaCO_3$	sl. positive 0.45
Hard	146.00	7,300		
Carb.	8.60	430		
Non Carb.	137.40	6,870		
Alk.	8.60	430		
Specific Gravity		1.037		

Mobil/Devonian/H & J Sec. 32, Well #1/2-15-80/Heater treat

	me/l	mg/l		
Ca	93.00	1,860		
Mg	19.00	228		
Na	608.46	13,989		
Iron		0.28		
HCO_3	11.50	702		
SO_4	41.64	2,000		
Cl	667.32	23,664		
TDS		42,442	$CaSO_4$	negative 0.65
6.90 ph @ 68°F			$CaCO_3$	sl. positive 0.37
Hard	112.00	5,600		
Carb.	11.50	575		
Non Carb.	100.50	5,025		
Alk.	11.50	575		
Specific Gravity		1.031		

Mobil/Devonian/H & J Sec. 497/2-15-80/Skimming system

	me/l	mg/l		
Ca	108.00	2,160		
Mg	40.00	480		
Na	555.24	12,675		
Iron		0.66		
HCO_3	13.70	836		
SO_4	40.99	1,969		
Cl	648.54	22,998		
TDS		41,208	$CaSO_4$	negative 0.50
6.76 ph @ 68°F			$CaCO_3$	sl positive 0.39
Hard	148.00	7,400		
Carb.	13.70	685		
Non Carb.	134.30	6,715		
Alk.	13.70	685		
Specific Gravity		1.030		