MURPHY OPERATING CORPORATION

ROSWELL PETROLEUM BUILDING

ROSWELL, NEW MEXICO 88201

MAILING ADDRESS
P. O. DRAWER 2648

TELEPHONE
505 623-7210

March 25, 1985

Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501
Attn: Mr. Gilbert Quantana

Re: Expansion of Waterflood
Todd Lower San Andres Unit
Roosevelt County, New Mexico

Dear Mr. Quantana:

Enclosed find application dated March 22, 1985 for five (5) injection wells located in the above referenced unit. The original plan of operation for this unit called for the utilization of four (#30-09, 31-03, 31-09, 32-03 marked in red on attached map) injection wells thereby creating one 320 acre five spot pattern. The utilization of the five wells included in this application (#29-13, #30-15, #31-1, #31-7, #32-05 marked in blue on attached map) creates four 80 acre five spot patterns. This pattern creates a more uniform and efficient flood pattern and is compatable with the ultimate flood pattern which calls for 80 acre five spots throughout the unit.

Enclosed with the application is a plat with a 1/2 mile radius circle drawn around each injection well and a schematic showing the required downhole information. Below are certain statements relating to the completion of the required items as listed on application Form C-108.

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : As stated above

#VI : Attached and headed as Tabulated List of Drilling and Completion Information

#VII : 1) Included on tabulated form see VI above
2) This is a closed system
3) Included on tabulated form see VI above
4) Attached find water analysis and letter dated March 20, 1985 from Chemex, Inc., Artesia, New Mexico
5) Not applicable

#VIII: Geological data on Injection Zone & Fresh Water Zones in area.

Injection Zone: The proposed injection zone is known as the Slaughter P-2 porosity zone of the San Andres Formation. This zone is a tan to brown dolomite. Scattered anhydrite inclusion and bedding occurs along with infrequent zones of fine solution porosity. The top of the P-2 occurs at approximately 4220' below ground level and has an approximate thickness of 40 to 60 feet. This zone dips south and east and as a result the bottom of this zone can occur at depths approaching 4335' below ground level.

Fresh Water Zone: The only known fresh water source in this area is the Ogalala Formation. This is a fresh water sand that is infrequently present throughout the area. The maximum reported depth is 250 feet below ground level as evidenced in two water wells located approximately 2 1/2 miles east of the Todd Lower San Andres Unit eastern boundary line. If a local presence of the Ogalala exists it will be protected by the 280 feet or more of 8 5/8" surface casing set in all of the wells in the Todd Lower San Andres Unit.

IX : All past stimulation programs are listed on the tabulated form see VI above.

X : There are no producing fresh water wells within one mile of the injection wells.

XI : Although this requirement is for disposal wells, Murphy Operating Corporation has indeed examined all available geologic and engineering data and we find no evidence of open faults or any other hydrologic connection between disposal (injection) zone and any underground source of drinking water.

XII : The Proof of Notice requirement has been complied with. Please see the attached Affidavit of Publication and a signed and notorized statement from the landowner, Ted Williamson, Milnesand, New Mexico (505/675-2366) acknowledging and approving this application.

Murphy Operating Corporation hereby requests administrative approval to application. Should you have any questions or comments please contact me at the above listed number.

Sincerely,

MURPHY OPERATING CORPORATION

Mark B. Murphy
Vice President

MBM/bjf
Encl. As stated

2/20/82

Memo

From
Melba Carpenter
Oil Conservation Staff
Specialist

To Gilbert

Please note the attached. This is the application that I had David ask you about the other day, and you said that you had not seen it. You will also note that it is not signed, indicating perhaps that it is a copy.

This is also the group of wells that Mark Murphy told Jerry that you had given him verbal permission to inject into.

In any event, if this application is not satisfactory, which it apparently is not, please notify Murphy Operating. We need to get this taken care of if at all possible!

Thanks.

Melba

Oil Conservation Division Hobbs, New Mexico 88240
P.O. Box 1980

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: [x] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [ ] yes [ ] no

II. Operator: MURPHY OPERATING CORPORATION

Address: P. O. Drawer 2648, Roswell, New Mexico 88201

Contact party: Mark B. Murphy Phone: 505/623-7210

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? [x] yes [ ] no
If yes, give the Division order number authorizing the project #14-08-0001-19582 NMOCD #R-6677.

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: Mark B. Murphy Title Vice-President - Production

Signature: Mark B. Murphy Date: March 22, 1985

* 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.

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : Attached

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3) Included on tabulated form see VI above
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PHONE
505 - 746-6100

P. O. BOX 423
ARTESIA, NEW MEXICO
88210

CHEMEX

PRODUCTION - CHEMICALS - DRILLING

March 20, 1985

Murphy Operating Co.
P.O. Box 2648
Roswell, NM 88201

RE: Produced water from injection tank at Todd Unit, fresh water from injection tank at Todd Unit, and commingled samples of both.

Gentlemen:

We have recently taken samples of water from above captioned points and have conducted analysis of same. For your convenience, we have attached copies of these analysis.

It is the opinion of Chemex, Inc., that these waters are very compatable when commingled or injected separately.

If we can be of further assistance, please contact us.

Best regards,

Fred Jones

Phone (505) 746-6100

CHEMEX

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Murphy operating Co. Date 3-11-85

Field Todd Unit County Roosevelt State NM

Lease and Well No. _____ Prod. Formation _____

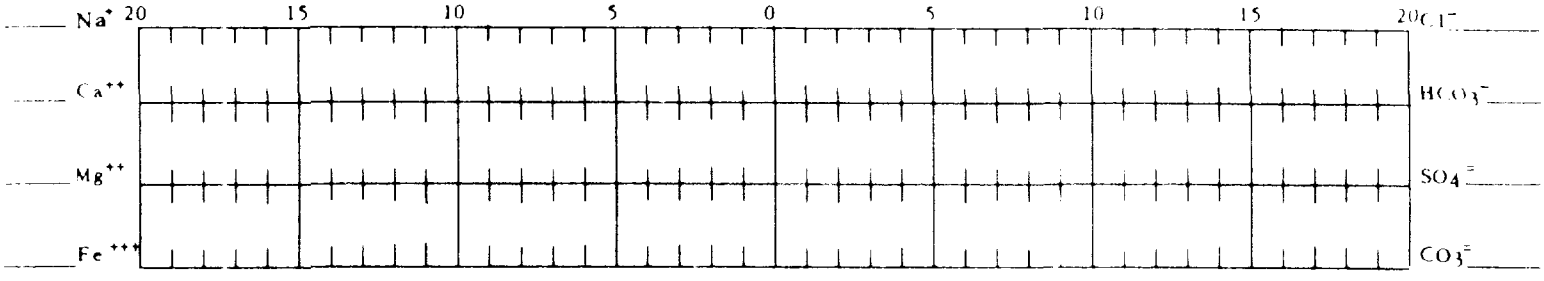
Source of Sample Produced Water Injection Tank

Sample of Prod. Water [ ] Inj. Water [X] Other [ ]

Date Collected 3-8-85 _____ Analyst GB

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me IN SCALE UNIT)



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	1200	60
Magnesium	2400	196
Sodium	2290	100
Iron	0	0
Chloride	90,000	2535
Bicarbonate	0	0
Carbonate	0	0
Sulfate	525	11
Total Hardness	3600	
Total Dissolved Solids		
Hydrogen Sulfide	-	-
Oxygen	-	-

ph 7

Sp Gravity _____

Remarks:

Phone (505) 746-6100

CHEMEX

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Murphy Operating Co. Date 3-11-85

Field Todd Unit County Roosevelt State NM

Lease and Well No. _____ Prod. Formation _____

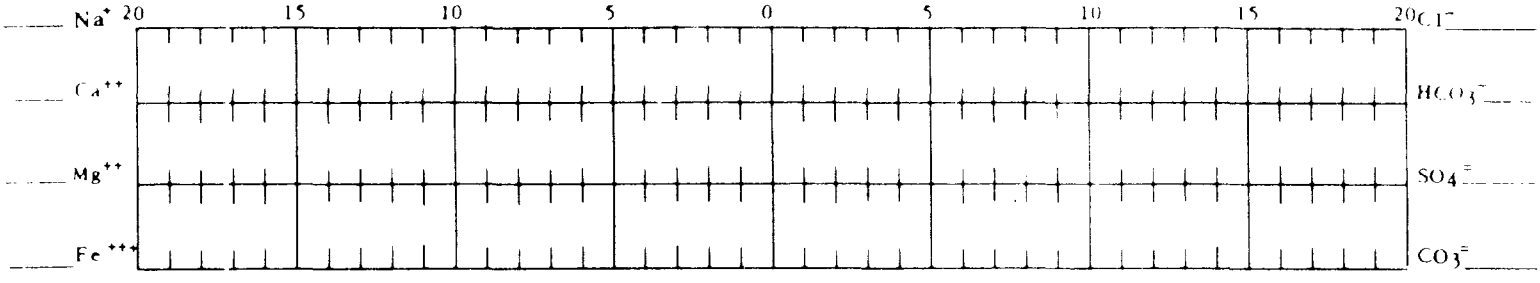
Source of Sample Fresh Water Injection Tank

Sample of Prod. Water [ ] Inj. Water [X] Other [ ]

Date Collected 3-8-85 _____ Analyst GB

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me l⁻ SCALE UNIT)



Dissolved Solids

Constituent	MG/L (PPM)	EPM
Calcium	TR	-
Magnesium	TR	-
Sodium	18	.8
Iron	0	0
Chloride	400	11
Bicarbonate	0	0
Carbonate	0	0
Sulfate	350	7
Total Hardness	TR	
Total Dissolved Solids		
Hydrogen Sulfide		
Oxygen		

ph 7

Sp. Gravity _____

Remarks:

Phone (505) 746-6100

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Murphy Operating Co. Date 3-11-85

Field Todd Unit County Roosevelt State NM

Lease and Well No. _____ Prod. Formation _____

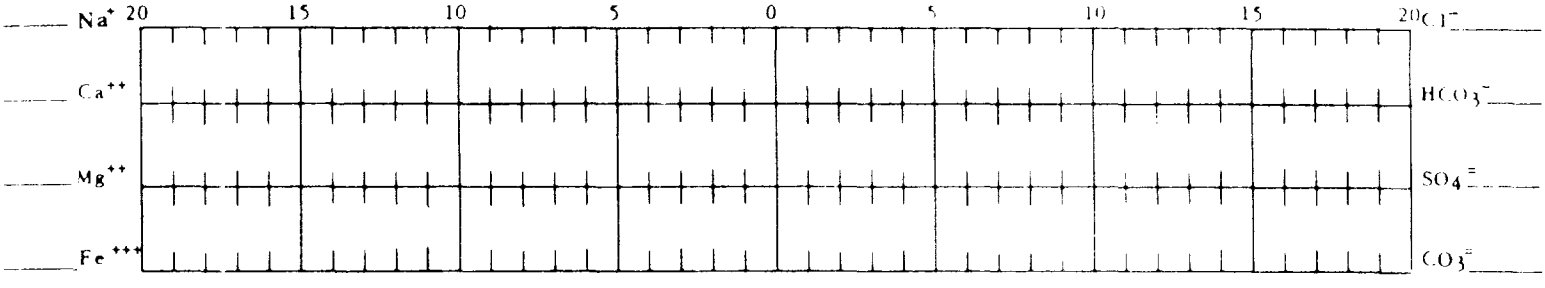
Source of Sample Commingled Produced & Fresh Water (50/50)

Sample of Prod. Water [ ] Inj. Water [X] Other [ ]

Date Collected 3-8-85 _____ Analyst GB

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me I" SCALE UNIT)



Dissolved Solics

Constituent	MG/L (PPM)	EPM
Calcium	600	30
Magnesium	900	74
Sodium	1169	51
Iron	0	0
Chloride	45,000	1267
Bicarbonate	0	0
Carbonate	0	0
Sulfate	250	5
Total Hardness	1500	
Total Dissolved Solids		
Hydrogen Sulfide	-	
Oxygen	-	

ph 7

Sp. Gravity _____

Remarks:

Affidavit of Publication

LEGAL NOTICE

This shall constitute notice to all the world that Murphy Operating Corporation (United Bank Plaza, Suite 300, Post Office Box 2648, Roswell, New Mexico 88202-2648, Attention Mark B. Murphy, telephone number 505-623-7210) intends to convert the following wells from producing to injection service for the purpose of expanding the existing waterflood project, the Todd Lower San Andres Unit, located in Township 7 South, Range 36 East, NMPM, Roosevelt County, New Mexico.

Well No.	Sect.
29-13	29
30-15	30
31-1	31
31-7	31
32-5	32

Water will be injected into the P2 zone of the San Andres formation (between the depths of 4200' to 4350') at rates of approximately 250 BWPD and at maximum wellhead pressures not exceeding 850psi.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, Post Office Box 2088, Santa Fe, New Mexico 87501 within 15 days.

Published in Portales News-Tribune February 27, 1985 Legal No. 8842.

I, Scot Stinnett

Editor of

THE PORTALES NEWS-TRIBUNE

a newspaper of general paid circulation and entered under second class postal privilege in Roosevelt County, published daily, (except Saturday) at Portales, New Mexico, for the fifty-two (52) consecutive weeks preceding this date, do solemnly swear that a copy of the above notice, as per clipping attached, was published weekly in the regular and entire issue of said newspaper, and not in any supplement thereof for 1 consecutive weeks commencing with the issue dated February 27 19 85

and ending with the issue dated February 27 19 85

All publication costs having been paid.

Scot Stinnett

Subscribed and sworn to before me this 27th day of February 19 85

Lee Maris Barnett

Notary Public

My commission expires 3/7/87 19____

PORTALES NEWS-TRIBUNE
101 East 1st Street - Box 848 - Phone 356-4481
Portales, New Mexico 88130

No. ____

Date 3-1 19 85

Received from Murphy operating Corp

Ten 73/100 Dollars $ 10.73

For Legal #8842

AMOUNT OF ACCOUNT $____

AMOUNT PAID . . . $ 10.73 THANK YOU.

BALANCE DUE . . . $____

CASH ☑ CHECK ☐ M. O. ☐

PORTALES NEWS-TRIBUNE

BY ____

AFFIDAVIT

STATE OF NEW MEXICO)
)
COUNTY OF ROOSEVELT)

Ted Williamson, Sr. of Milnesand, New Mexico, being of lawful age and being first duly sworn, deposes and declares:

1) That he is one and the same as the Ted Williamson, Sr. who is the owner of certain lands within the boundaries of that certain Waterflood project known as the Todd Lower San Andres Unit, located in Roosevelt County, New Mexico; and

2) That he acknowledges and approves without any reservation whatsoever the provisions of that certain Application for Authorization to Inject dated March 22, 1985 submitted to the Bureau of Land Management, the New Mexico Oil Conservation Division and the United States Geological Survey by Murphy Operating Corporation, on behalf of the working interest owners of the aforementioned Unit; and

3) That he agrees the approval of said application for Authorization to Inject is necessary to the expansion and prudent operation of the existing pilot waterflood.

SIGNED under the pains and penalties of perjury this 22nd day of March, 1985.

By: Ted Williamson
Ted Williamson, Sr.

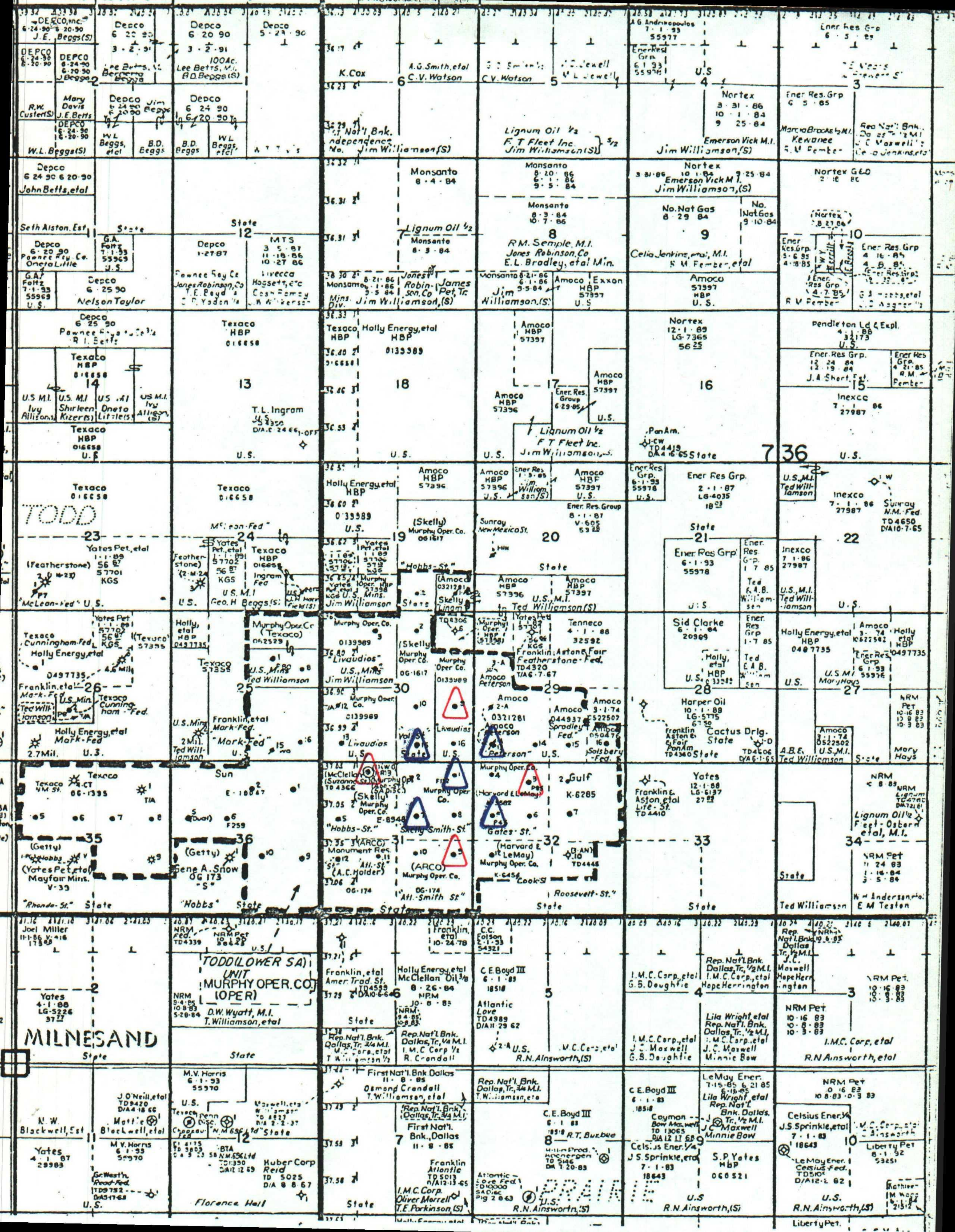
STATE OF NEW MEXICO)
)
COUNTY OF ROOSEVELT)

The foregoing instrument was acknowledged before me this 22nd day of March, 1985, by TED WILLIAMSON, SR.

MY COMMISSION EXPIRES:

January 19, 1987

Billie J. Fox
Billie J. Fox, Notary Public



Depco
6 20 90
3 2 91
Depco
5 24 90
K. Cox
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A.G. Smith, etal
C.V. Watson
C.V. Watson
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10 1 84
9 25 84
Ener. Res. Grp
6 5 85
Lignum Oil 1/2
F.T. Fleet Inc.
Jim Williamson(S)
Emerson Vick M.I.
Jim Williamson,(S)
Kewanee
W.L. Beggs(S)
Depco
6 24 90 6 20 90
John Betts, etal
Monsanto
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Jim Williamson,(S)
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Seth Alston, Est.
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Celia Jenkins, etal, M.I.
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T.E. Boyd
Jones Robin-son, Co
James Pet. Tr.
Jim Williamson,(S)
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Jim Williamson,(S)
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Nelson Taylor
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Pendleton Ld & Expl.
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Texaco
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Ivy Allison
U.S. M.I.
Shirleen Kizer(S)
U.S. M.I.
Oneta Little(S)
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Lignum Oil 1/2
F.T. Fleet Inc.
Jim Williamson(S)
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Texaco
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Amoco
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(Featherstone)
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Texaco
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"Hobbs-St."
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Amoco
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Ener. Res Grp
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U.S. M.I.
Geo. H. Beggs(S)
Jim Williamson
State
U.S. M.I.
Ted Williamson(S)
U.S.
U.S. M.I.
Ted Williamson
U.S.
Texaco
Cunningham-Fed.
Holly Energy, etal
Holly, etal
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(Texaco)
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(Skelly)
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Sid Clarke
6 1 84
20909
Holly Energy, etal
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0497735
Amoco
Holly
HBP
0497735
Texaco
57355
"Livaudias"
U.S., Mins.
Jim Williamson
Murphy Oper. Co.
0139989
Franklin; Aston & Fair
Featherstone-Fed.
TD 4320
T/A 6 7 67
U.S. Mins
Ted Williamson
Franklin, etal
Mark-Fed.
26
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Amoco
Peterson
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Holly Energy, etal
Mark-Fed.
Franklin, etal
Mark-Fed.
"Mark-Fed"
Amoco
0321281
Amoco
044937
Sprodley Fed.
Amoco
3 1 74
0522502
Harper Oil
10 1 89
LG 5775
Cactus Drlg.
State
Amoco
0522502
U.S. M.I.
NRM Pet
2.7 Mil.
U.S.
Ted Williamson
U.S.
"Livaudias"
U.S.
"Peterson"
U.S.
Solsbery Fed.
State
Ted Williamson
Mary Hays
Texaco
NM St.
Sun
Murphy Oper. Co.
Gulf
K 6285
Franklin & Aston, etal
Yates
12 1 88
LG 6137
NRM
6 8 83
Lignum Oil 1/2
Fleet-Osborn
etal, M.I.
(Skelly)
Murphy Oper. Co.
E 8948
"Hobbs-St."
Skelly "Smith St."
"Gates-St."
35
(Getty)
(Yates Pet., etal)
Mayfair Mins.
V 39
36
(Getty)
Gene A. Snow
OG 173
"S"
31
(ARCO)
Monument Res.
(A.C. Holder)
(ARCO)
Murphy Oper. Co.
32
(Harvard & LeMay)
Murphy Oper. Co.
"Cook-St."
33
34
NRM Pet
11 24 83
1 16 84
3 5 84
"Rhonda-St."
State
"Hobbs"
State
State
"Atl.-Smith St."
"Roosevelt-St."
State
State
Ted Williamson
W.H. Anderson, etal
E.M. Testen
Joel Miller
NRM
Fed.
TD 4339
NRM Pet
Franklin, etal
10 24 78
C.C. Folson
TODD (LOWER SA) UNIT
MURPHY OPER. CO. (OPER)
Franklin, etal
Amer. Trad. St.
TD 4535
Holly Energy, etal
McClellan Oil 3/8
8 26 84
C.E. Boyd III
6 1 83
18518
Rep. Nat'l. Bnk.
Dallas, Tr. 1/2 M.I.
I.M.C. Corp., etal
Hope Herrington
I.M.C. Corp., etal
G.B. Doughtie
NRM Pet.
Yates
4 1 88
LG 5226
2
D.W. Wyatt, M.I.
T. Williamson, etal
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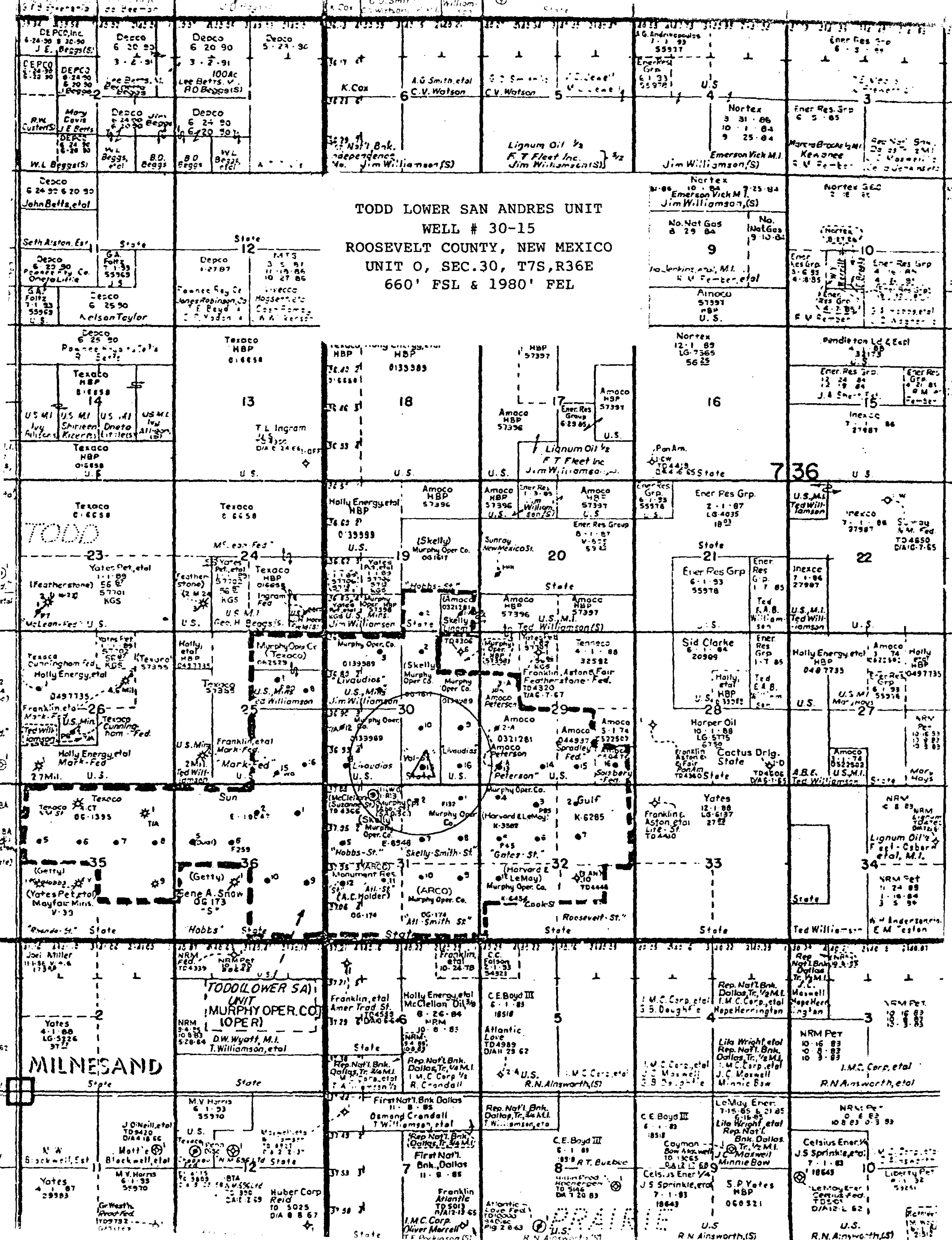
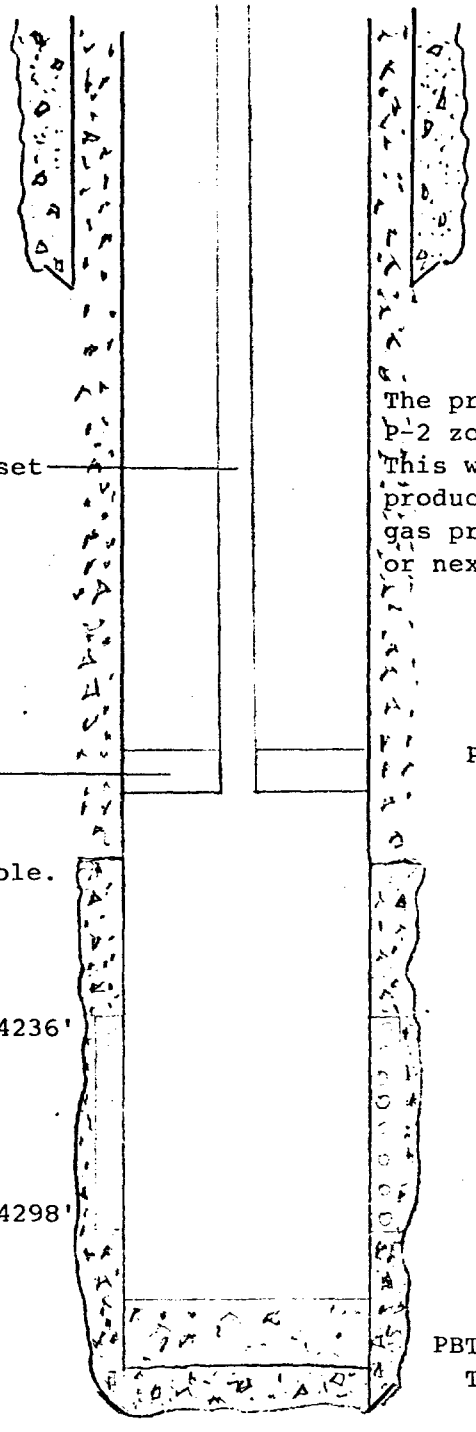
Atlantic
Love
TD 4989
State
NRM Pet.
MILNESAND
State
State
Rep. Nat'l. Bnk.
Dallas, Tr. 3/4 M.I.
Rep. Nat'l. Bnk.
Dallas, Tr. 1/4 M.I.
I.M.C. Corp 1/2
R. Crandall
U.S.
R.N. Ainsworth,(S)
I.M.C. Corp., etal
J.C. Maxwell
G.B. Doughtie
Lila Wright, etal
Rep. Nat'l. Bnk.
Dallas, Tr.
I.M.C. Corp., etal
J.C. Maxwell
Minnie Bow
I.M.C. Corp., etal
R.N. Ainsworth, etal
M.V. Harris
6 1 93
55970
First Nat'l. Bnk Dallas
11 8 85
Osmond Crandall
T. Williamson, etal
Rep. Nat'l. Bnk.
Dallas, Tr. 3/4 M.I.
T. Williamson, etal
C.E. Boyd III
LeMay Ener.
Lila Wright, etal
NRM Pet
J. O'Neill, etal
TD 9420
N.W. Blackwell, Est.
Mattie Blackwell, etal
M.V. Harris
6 1 93
55970
State
11
12
First Nat'l. Bnk., Dallas
11 8 85
7
C.E. Boyd III
8
R.T. Buzbee
Cayman
J.C. Maxwell
Minnie Bow
9
Celsius Ener., etal
J.S. Sprinkle, etal
7 1 83
18643
10
Liberty Pet
Yates
4 1 87
29383
Huber Corp
Reid
TD 5025
Franklin
Atlantic
TD 5013
Celsius Ener. 1/4
J.S. Sprinkle, etal
7 1 83
18643
S.P. Yates
HBP
068521
LeMay Ener.
Celsius Fed.
U.S.
Florence Hall
State
I.M.C. Corp.
Oliver Morrell
T.E. Parkinson,(S)
U.S.
R.N. Ainsworth,(S)
PRAIRIE
U.S
R.N. Ainsworth,(S)
U.S.
R.N. Ainsworth,(S)
Liberty Pet.


TODD LOWER SAN ANDRES UNIT
WELL # 30-15
ROOSEVELT COUNTY, NEW MEXICO
UNIT O, SEC.30, T7S,R36E
660' FSL & 1980' FEL
TODD
TODD(LOWER SA) UNIT
MURPHY OPER.CO. (OPER)
MILNESAND

TODD LOWER SAN ANDRES UNIT
WELL # 30-15
ROOSEVELT COUNTY, NEW MEXICO
UNIT O, SEC. 30, T7S,R36E
660' FSL & 1980' FEL

340' 8 5/8" 24# J-55 in 12¼" hole. 250 sacks cememt. Circulate to surface.

Elevation 4144' GL
Annulus is filled with inert fluid and pressure tested.



The proposed injection interval is the P-2 zone of the San Andres Formation. This well was originally drilled as a producer. No known commercial oil or gas production exists in the next higher or next lower zone.

2 3/8" 4.7# J-55 PVC lined and set approximately 4167' GL

5 1/2" UNI-1 3.10 packer set approximately 4170' GL

Proposed Injection Rate/Pressure

	BPD/PSI
Average:	250/400#
Maximum:	600/850#

4352' 5½" 15.5# J-55 in 7 7/8" hole. 1200 sacks cement. Circulate to surface.

4236'

4298'

P-2 S.A. Perforations
1JSPF .50" 4236'-4298'

PBTD: 4333'
TD: 4358' GL

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : Attached

#VI : Attached and headed as Tabulated List of Drilling and Completion Information

#VII : 1) Included on tabulated form see VI above
2) This is a closed system
3) Included on tabulated form see VI above
4) Attached find water analysis and letter dated March 20, 1985 from Chemex, Inc., Artesia, New Mexico
5) Not applicable

#VIII: Geological data on Injection Zone & Fresh Water Zones in area.

Injection Zone: The proposed injection zone is known as the Slaughter P-2 porosity zone of the San Andres Formation. This zone is a tan to brown dolomite. Scattered anhydrite inclusion and bedding occurs along with infrequent zones of fine solution porosity. The top of the P-2 occurs at approximately 4220' GL and has an approximate thickness of 40 to 60 feet. This zone dips south and east and as a result the bottom of this zone can occur at depths approaching 4335'.

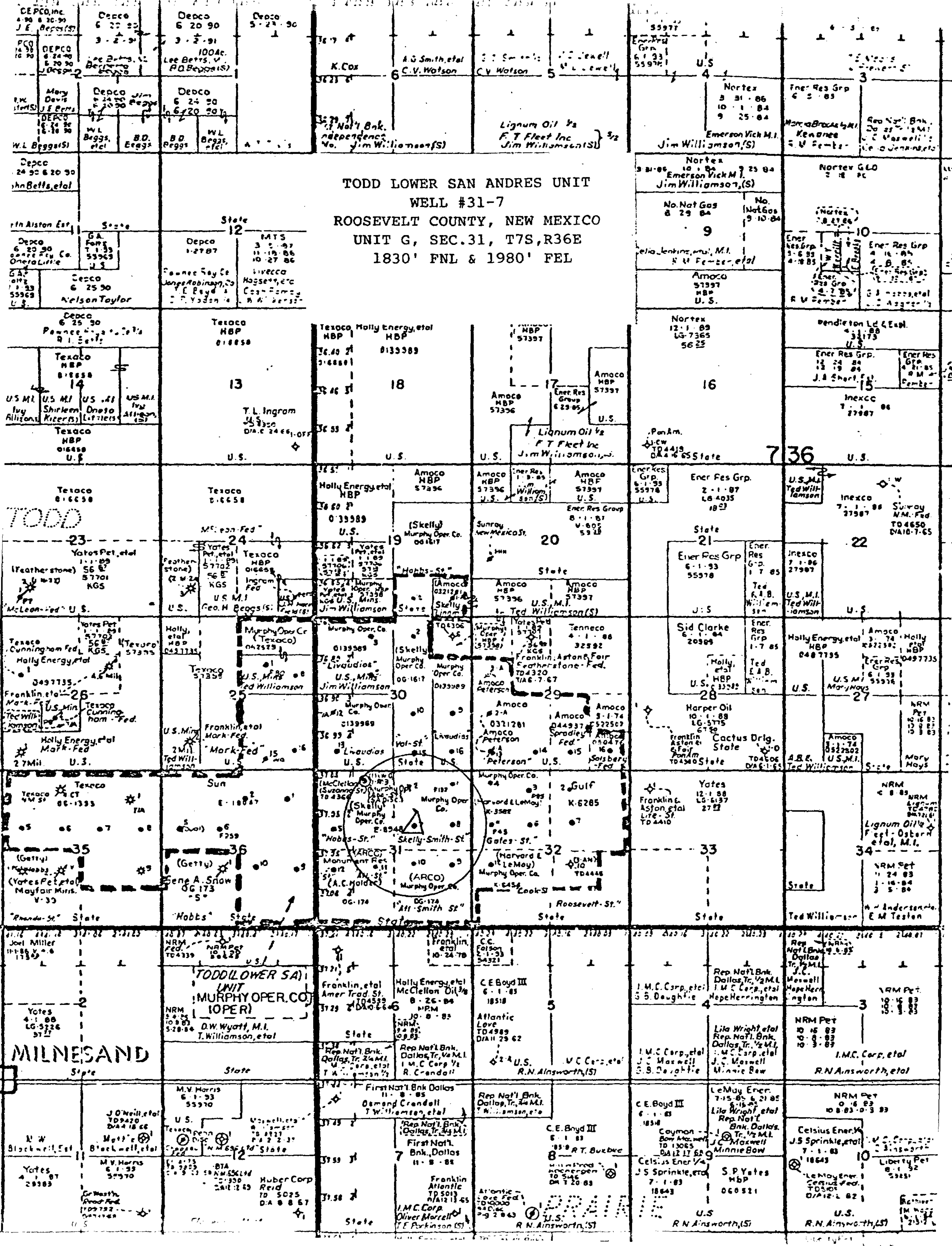
Fresh Water Zone: The only known fresh water source in this area is the Ogalala Formation. This is a fresh water sand that is infrequently present throughout the area. The maximum reported depth is 250 feet below ground level as evidenced in two water wells located approximately 2 1/2 miles east of the Todd Lower San Andres Unit eastern boundary line. If a local presence of the Ogalala exists it will be protected by the 280 feet or more of 8 5/8" surface casing set in all of the wells in the Todd Lower San Andres Unit.

IX : All past stimulation programs are listed on the tabulated form see VI above.

X : There are no producing fresh water wells within one mile of the injection wells.

XI : Although this requirement is for disposal wells, Murphy Operating Corporation has indeed examined all available geologic and engineering data and we find no evidence of open faults or any other hydrologic connection between disposal (injection) zone and any underground source of drinking water.

XII : The Proof of Notice requirement has been complied with. Please see the attached Affidavit of Publication and a signed and notorized statement from the landowner, Ted Williamson, Milnesand, New Mexico (505/675-2366) acknowledging and approving this application.


TODD LOWER SAN ANDRES UNIT
WELL #31-7
ROOSEVELT COUNTY, NEW MEXICO
UNIT G, SEC.31, T7S,R36E
1830' FNL & 1980' FEL
TODD
MILNESAND
TODD(LOWER SA) UNIT
MURPHY OPER. CO. (OPER)
Texaco
Amoco
Nortex
Murphy Oper. Co.
Holly Energy, etal
Jim Williamson
Skelly-Smith-St.
Hobbs-St.
Roosevelt-St.
Mark-Fed
State
U.S.

TODD LOWER SAN ANDRES UNIT
WELL # 31-7
ROOSEVELT COUNTY, NEW MEXICO
UNIT G, SEC. 31, T7S,R36E
1830' FNL & 1980' FEL

285' KB 8 5/8" 24# in 12" hole. 150 sacks cement. Circulate to surface.

Elevation 4135' GL
Annulus is filled with inert fluid and pressure tested.

Proposed Injection Rate/Pressure

	BPD/PSI
Average:	150/400#
Maximum:	600/850#

The proposed injection interval is the P-2 zone of the San Andres Formation. This well was originally drilled as a producer. No known commercial oil or gas production exists in the next higher or next lower zone.

2 3/8" 4.7# J-55 PVC lined and set approximately 4145'

5 1/2" UNI-1 3.10 packer set approximately 4148'

4305' KB 5½" 14# in 7 7/8" hole. 300 sacks cement. Top cement above 3000' by CE log.

4236'

4284'

P-2 S.A. Perforations
1JSPF 4255', 57, 58, 62, 68, 69, 71, 72, 75, 86, 88, 4290' (12 shots).
Reperforated (3/7/84)
1JSPF .42" 4236'-4284' KB

PBTD: 4285'
TD: 4305'

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : Attached

#VI : Attached and headed as Tabulated List of Drilling and Completion Information

#VII : 1) Included on tabulated form see VI above
2) This is a closed system
3) Included on tabulated form see VI above
4) Attached find water analysis and letter dated March 20, 1985 from Chemex, Inc., Artesia, New Mexico
5) Not applicable

#VIII: Geological data on Injection Zone & Fresh Water Zones in area.

Injection Zone: The proposed injection zone is known as the Slaughter P-2 porosity zone of the San Andres Formation. This zone is a tan to brown dolomite. Scattered anhydrite inclusion and bedding occurs along with infrequent zones of fine solution porosity. The top of the P-2 occurs at approximately 4220' GL and has an approximate thickness of 40 to 60 feet. This zone dips south and east and as a result the bottom of this zone can occur at depths approaching 4335'.

Fresh Water Zone: The only known fresh water source in this area is the Ogalala Formation. This is a fresh water sand that is infrequently present throughout the area. The maximum reported depth is 250 feet below ground level as evidenced in two water wells located approximately 2 1/2 miles east of the Todd Lower San Andres Unit eastern boundary line. If a local presence of the Ogalala exists it will be protected by the 280 feet or more of 8 5/8" surface casing set in all of the wells in the Todd Lower San Andres Unit.

IX : All past stimulation programs are listed on the tabulated form see VI above.

X : There are no producing fresh water wells within one mile of the injection wells.

XI : Although this requirement is for disposal wells, Murphy Operating Corporation has indeed examined all available geologic and engineering data and we find no evidence of open faults or any other hydrologic connection between disposal (injection) zone and any underground source of drinking water.

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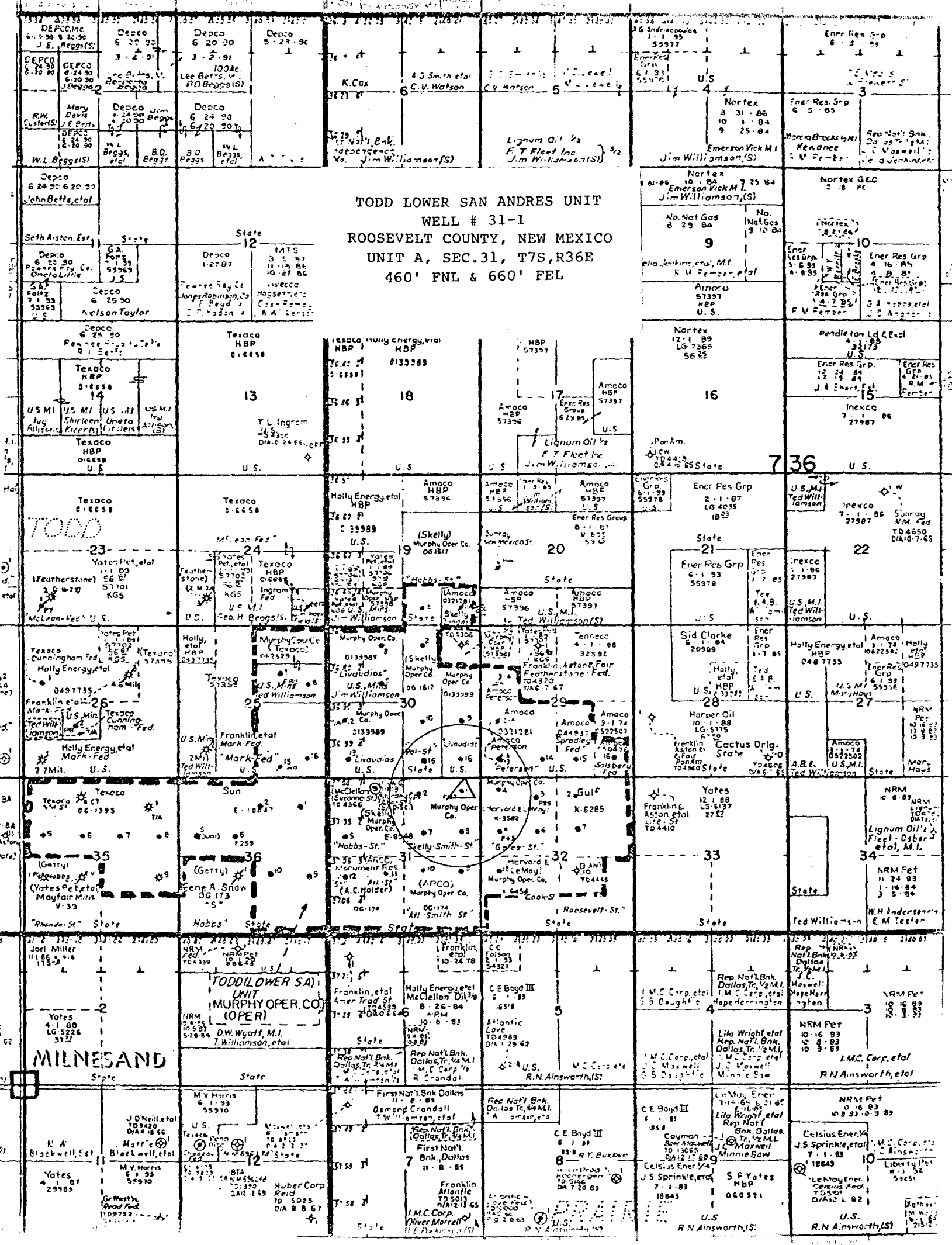
TODD LOWER SAN ANDRES UNIT
WELL # 31-1
ROOSEVELT COUNTY, NEW MEXICO
UNIT A, SEC.31, T7S,R36E
460' FNL & 660' FEL
TODD
MILNESAND
TODD(LOWER SA) UNIT
MURPHY OPER. CO.
(OPER)

TODD LOWER SAN ANDRES UNIT
WELL # 31-1
ROOSEVELT COUNTY, NEW MEXICO
UNIT A, SEC. 31, T7S,R36E
460' FNL & 660' FEL

292' 8 5/8" 24# J-55 in 12¼".
150 sacks of cement. Circulate
to surface.

Elevation 4131.9' GR
4141' KB

Annulus is filled with inert fluid and pressure tested.

Proposed Injection Rate Pressure

	BPD	PSI
Average:	240	400#
Maximum:	600	850#

The proposed injection interval is the P-2 zone of the San Andres Formation. This well was originally drilled as a producer. No known commercial oil or gas production exists in the next higher or next lower zone.

2 3/8" 4.7# J-55 PVC lined and set approximately 4167' GL

4 1/2" UNI-1 3.05 packer set approximately 4170' GL

4300' 4½" 9.5# cement 7 8" hole.
350 sacks of cement. Top cement
3314' by CE log.

4239'

P-2 S.A. Perforations
1JSPF 4239', 47, 49, 51, 55, 61, 65,
71, 74, 76, 4278 (11 shots)
Reperforated (10/13/84)
1JSPF .42" 4240'-4300' KB
Open Hole 4300'-4304' KB

4300'

TD: 4304' KB

Bottom of Open Hole

4304'

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : Attached

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#VII : 1) Included on tabulated form see VI above
2) This is a closed system
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4) Attached find water analysis and letter dated March 20, 1985 from Chemex, Inc., Artesia, New Mexico
5) Not applicable

#VIII: Geological data on Injection Zone & Fresh Water Zones in area.

Injection Zone: The proposed injection zone is known as the Slaughter P-2 porosity zone of the San Andres Formation. This zone is a tan to brown dolomite. Scattered anhydrite inclusion and bedding occurs along with infrequent zones of fine solution porosity. The top of the P-2 occurs at approximately 4220' GL and has an approximate thickness of 40 to 60 feet. This zone dips south and east and as a result the bottom of this zone can occur at depths approaching 4335'.

Fresh Water Zone: The only known fresh water source in this area is the Ogalala Formation. This is a fresh water sand that is infrequently present throughout the area. The maximum reported depth is 250 feet below ground level as evidenced in two water wells located approximately 2 1/2 miles east of the Todd Lower San Andres Unit eastern boundary line. If a local presence of the Ogalala exists it will be protected by the 280 feet or more of 8 5/8" surface casing set in all of the wells in the Todd Lower San Andres Unit.

IX : All past stimulation programs are listed on the tabulated form see VI above.

X : There are no producing fresh water wells within one mile of the injection wells.

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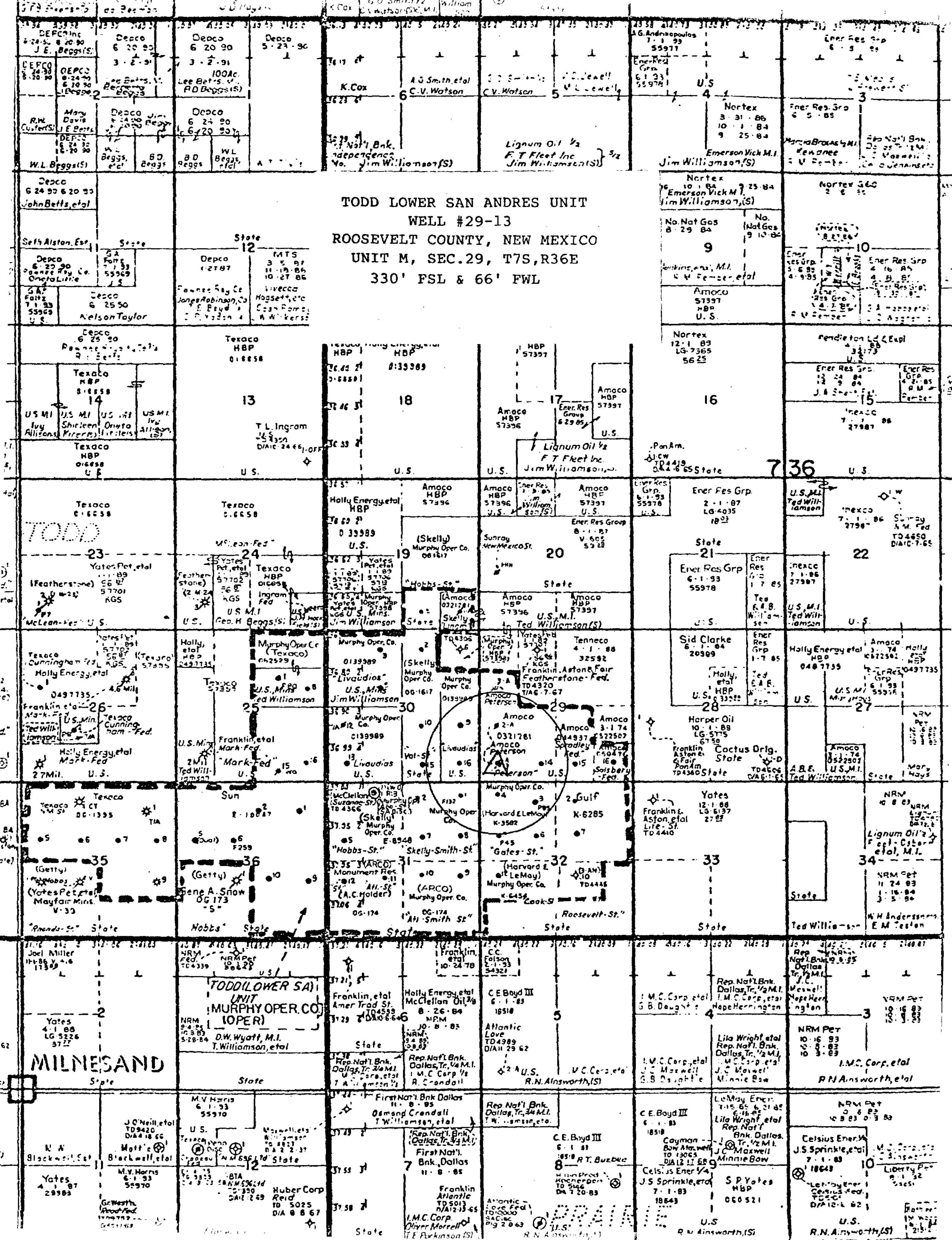
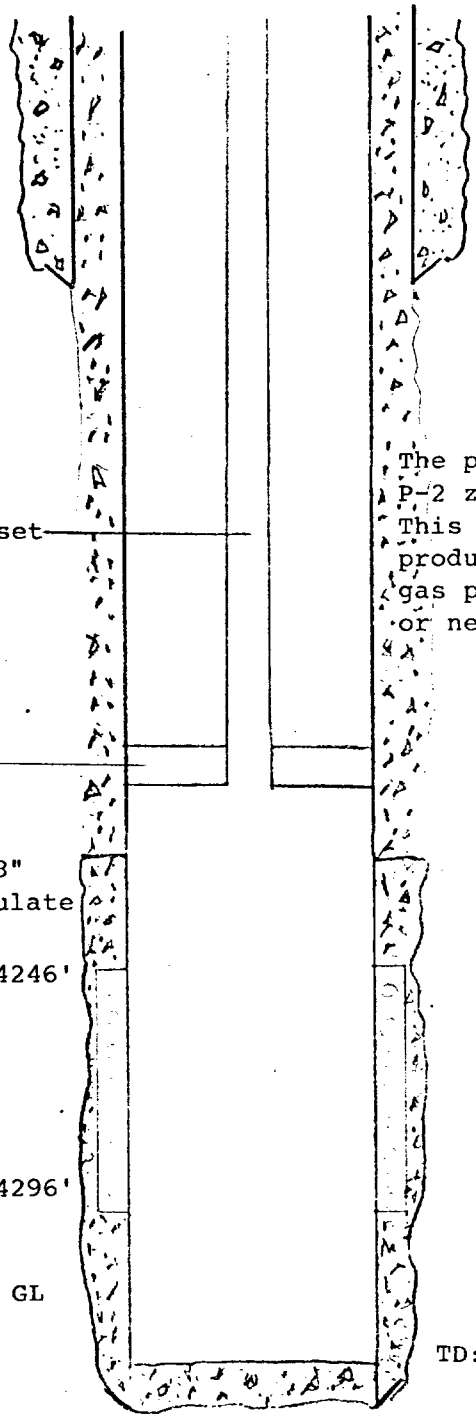


TODD LOWER SAN ANDRES UNIT
WELL #29-13
ROOSEVELT COUNTY, NEW MEXICO
UNIT M, SEC.29, T7S,R36E
330' FSL & 66' FWL
TODD
MILNESAND
TODD(LOWER SA) UNIT
MURPHY OPER.CO (OPER)

TODD LOWER SAN ANDRES UNIT
WELL # 29-13
ROOSEVELT COUNTY, NEW MEXICO
Unit M, SEC. 29, T7S,R36E
330' FSL & 660' FWL

334.55' GL 8 5/8" 24# J-55 in 12¼" hole. 250 sacks cement. Circulate to surface.

Elevation 4140' GL
Annulus is filled with inert fluid and pressure tested.



The proposed injection interval is the P-2 zone of the San Andres Formation. This well was originally drilled as a producer. No known commercial oil or gas production exists in the next higher or next lower zone.

2 3/8" 4.7# J-55 PVC lined and set approximately 4167' GL.

5 1/2" UNI-1 3.05 packer set approximately 4170' GL.

Proposed Injection Rate/Pressure

	BPD/PSI
Average:	180/400#
Maximum:	600/850#

4334' GL 5½" 15.5# J-55 in 7 7/8" hole. 1000 sacks cement. Circulate to surface.

4246'

4296'

P-2 S.A. Perforations
1JSPF .42" diamater 4246'-4296' GL

TD: 4335'

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : Attached

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2) This is a closed system
3) Included on tabulated form see VI above
4) Attached find water analysis and letter dated March 20, 1985 from Chemex, Inc., Artesia, New Mexico
5) Not applicable

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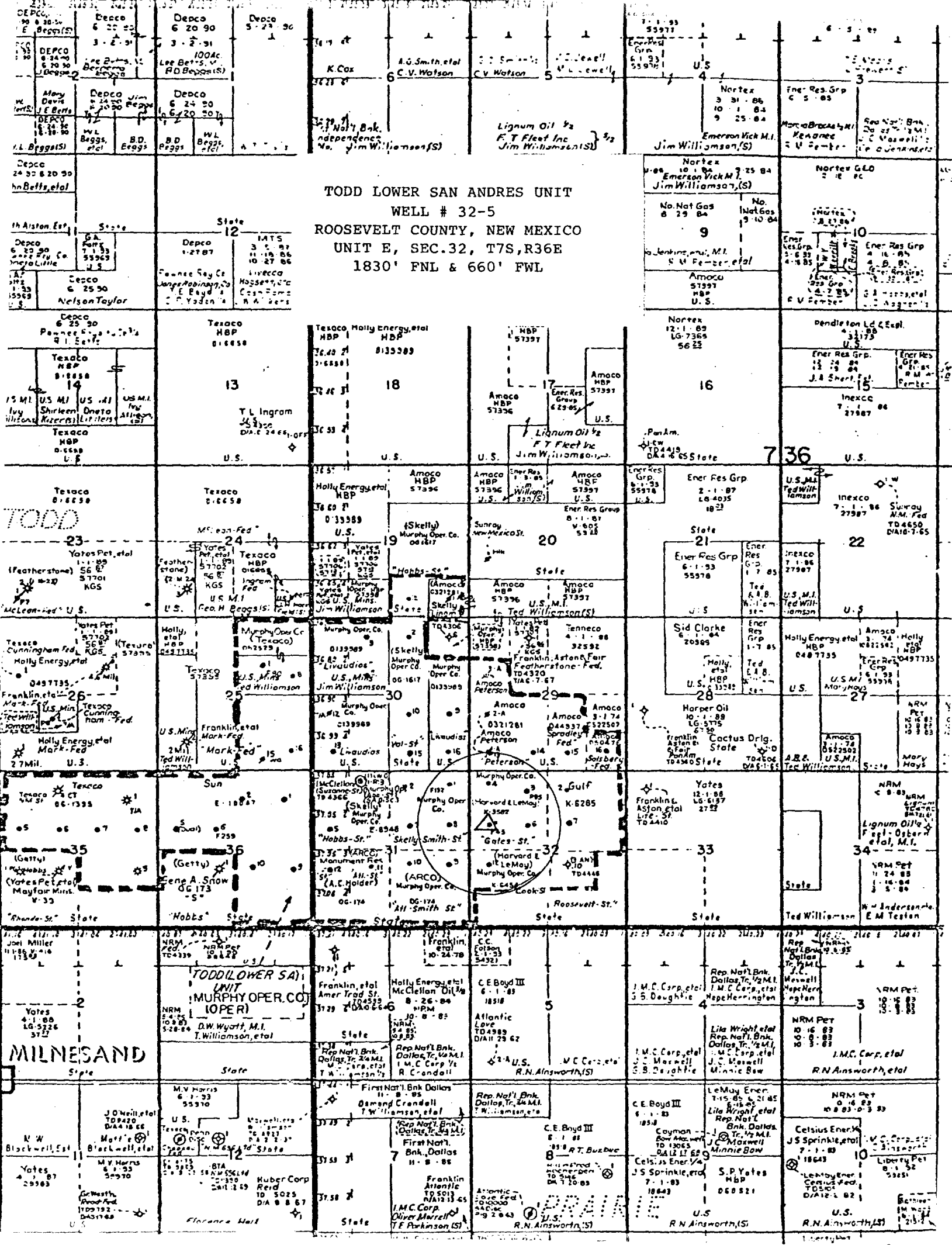

TODD LOWER SAN ANDRES UNIT
WELL # 32-5
ROOSEVELT COUNTY, NEW MEXICO
UNIT E, SEC.32, T7S,R36E
1830' FNL & 660' FWL
TODD
MILNESAND
TODD(LOWER SA) UNIT
MURPHY OPER. CO.
(OPER)

TODD LOWER SAN ANDRES UNIT
WELL # 32-5
ROOSEVELT COUNTY, NEW MEXICO
UNIT E, SEC. 32, T7S, R36E
1830' FNL & 660' FWL

272' KB 8 5/8" 24# in 12" hole. 175 sacks cement. Circulate to surface.

Elevation 4122' GR
4129' GL
4141' KB

Annulus is filled with inert fluid and pressure tested.

Proposed Injection Rate/Pressure

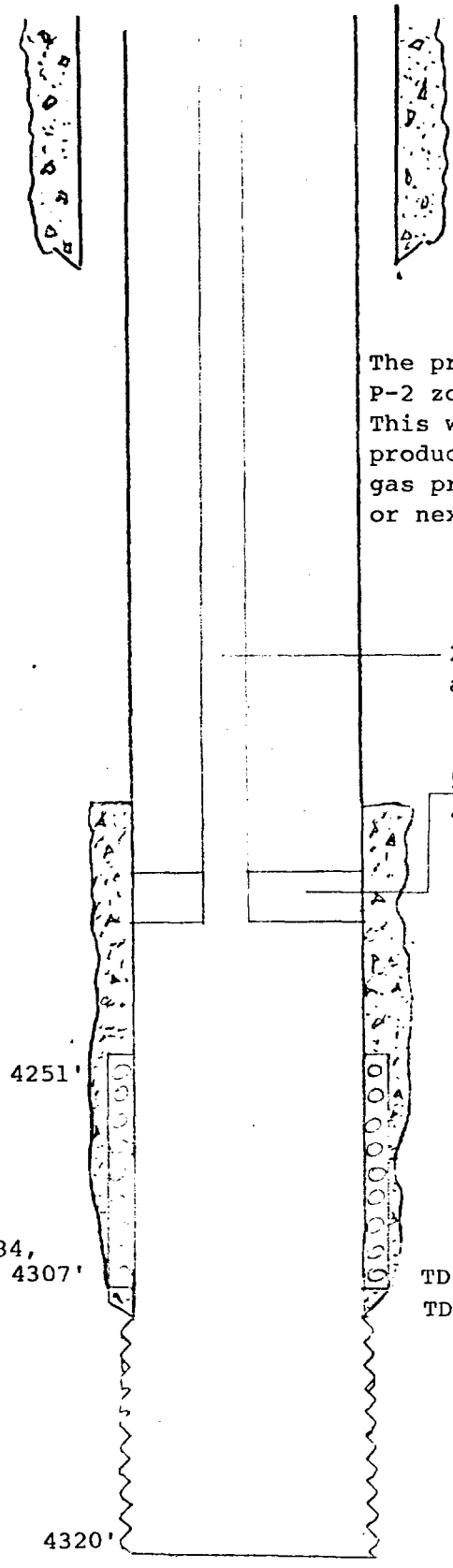
	BPD/PSI
Average:	150/400#
Maximum:	600/850#

The proposed injection interval is the P-2 zone of the San Andres Formation. This well was originally drilled as a producer. No known commercial oil or gas production exists in the next higher or next lower zone.

2 3/8" 4.7# J-55 PVC lined and set approximately 4148' KB

5 1/2" UNI-1 3.10 packer set approximately 4151' KB

4308' KB 5½" 14# in 7 7/8" hole. 300sacks of cement. Top cement above 3600' by CE log.



P-2 S.A. Perforations
1JSPF 4267; 68, 70, 72, 74, 76, 84, 86, 88, 90, 92 (11 shots)
Reperforated (9/26/84)
1JSPF .42" 4251'-4307' KB
Open Hole 4308'-4320' KB

TD: 4308' KB
TD: 4320' KB after drill out

Bottom of Open Hole

REQUIRED INFORMATION ITEM: Listed in same format as Form C-108

#V : Attached

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2) This is a closed system
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STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
March 26, 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

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

Tell what needed is

RE: Proposed:
MC_____
DHC_____
NSL_____
NSP_____
SWD_____
WFX X
PMX_____

Gentlemen:

I have examined the application for the:

Murphy Operating Co.	Todd Lower San Andres Unit (5 wells)		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

O.K.----J.S.

Yours very truly,

Jerry Sexton
Supervisor, District 1

/mc

TABULATED LIST OF DRILLING AND COMPLETION INFORMATION
TODD LOWER SAN ANDRES UNIT PROPOSED INJECTION WELLS AND WELLS WITHIN AREA OF REVIEW

Well name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
TLSAU SEC.29 13 M 29-T7S-R36E 330' FSL & 660' FWL Elevation 4140' GL	IP	334.55'G1.8 5/8" 24#J-55in12 1/4" hole.250sks cmt., circ. surf. 4334'G1. 5 1/2" 15.5# J-55in 7 7/8" hole 1000 sks cmt. circ to surf.	12/7/84 1/2/85	4335' GL.	1JSPF .42" diam 4246'-4296' GL.	Acidize w/10,000 gal 28% HCl, 12,000# 100 mesh sand.	2 3/8"4.7# J-55 PVC lined set approx. 4167 GL.	5 1/2" UNI-1 3.05 pkr set approx 4170' GL	180/400#	600/850#
TLSAU SEC.30 15 O 30-T7S-R36E 660' FSL & 1980' FEL Elevation 4144' GL	IP	340' 8 5/8" 24# J-55 in 12 1/4" hole 250sks cmt circ surf. 4352' 5 1/2" 15.5# J-55 in 7 7/8" hole. 1200sks cmt.circ 193sks to pit	12/13 83 12/29 83	4358' GL. 4333' PBTD	1JSPF .50" 4236'-4298'	Acidize w/10,000 gal. 28% HCl, 12,000# 100 mesh sand.	2 3/8"4.7# J-55 PVC lined set approx. 4167'	5 1/2" UNI-1 3.10 pkr set approx 4170'	250/400#	600/850#
TLSAU SEC.31 1 A 31-T7S-R36E 460' FNL & 660' FEL Elevation 4131.9' GR 4141' KB	IP	292' 8 5/8" 24# J-55 in 12 1/4" 150sks cmt.circ. surf. 4300'4 1/2 9.5# cmt. 7 7/8" hole 350sks cmt. top cmt 3314' by CE log	9/2/67 9/13/67	4304' KB	1JSPF 4239, 47, 49, 51, 55, 61, 65, 71, 74, 76, 4278. (11 Shots) (10/13/84) Reperf 1JSPF .42" 4240-4300' Open Hole 4300'-4304' KB	Acidize w/3000 gal DS-30 (10/13/84) Reacidize w/2000 gal 28% NEFE	2 3/8"4.7# J-55 PVC lined set approx. 4167' GL	4 1/2" UNI-1 3.05 pkr set approx 4170' GL	240/400#	600/850#
TLSAU SEC.31 7 G 31-T7S-R36E 1830' FNL & 1980' FEL Elevation 4135' GL	IP	285' KB 8 5/8" 24# in 12" hole. 150sks cmt. circ surf. 4305' KB 5 1/2" 14# 7 7/8" hole. 300sks cmt. Top cmt above 3000' by CE log	1/8/71 0/13 71	4305 KB 4285PB TDKB	1JSPF 4255, 57, 58, 62, 68, 69, 71, 72, 75,86,88, 4290' (3/7/84) Reperforated 1JSPF .42" 4236'-4284' KB	Acidize w/ Phase1 3000gal 15% DS-30 Phase2 8000gal 15% DS-30 (3/7/84) Reacidize w/1000 gal 20% NEFE	2 3/8"4.7# J-55 PVC lined set approx. 4145'	5 1/2" UNI-1 3.10 pkr set approx 4148'	150/400#	600/850#

KEY: P-Producing IP-Proposed Injection
I-Injection TA-Temporarily Abandoned

TABULATED LIST OF DRILLING AND COMPLETION INFORMATION
TODD LOWER SAN ANDRES UNIT PROPOSED INJECTION WELLS AND WELLS WITHIN AREA OF REVIEW

Well name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) / Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
TLSAU SEC.32 5 E 32-T7S-R36E 1830' FNL & 660' FWL Elevation 4122' GR 4129' GL 4141' KB	Ip	272' KB 8 5/8" 24# in 12" hole 175sks cmt. Circ. surf. 4308' K.B. 5 1/2 14# in 7 7/8"hole 300sks Top cmt. above 3600' by CE log	8/18/71 9/20/71	4308 KB	1JSPF 4267, 68, 70, 72, 74, 76, 84, 86, 88, 90, 92 (9-26-84) Reperf. & drill open hole 1JSPF .42" 4251'-4307' KB Open Hole 4308'-4320' KB	Acidize w/ Phase 1 3000 gal 15% DS-30 Phase 2 8000 15% DS-30 (9-27-84)Reacidize w/1000gal 15% MEFE	2 3/8"4.7# J-55 PVC lined set approx. 4148' KB	5 1/2" UNI-1 3.10 pkr set appro 4151' KB	150/400#	600/850#
TLSAU SEC.30 9 I 30-T7S-R36E 1980' FSL & 660' FEL Elevation 4144' GL	I	323' 8 5/8" 24# J-55 in 12 1/4" hole 250sks cmt circ surf 4299' 5 1/2" 15.5# J-55 in 7 7/8" hole 1,100sks cmt, 150sks to pit	11/30/83 12/12/83	4320' GL 4299' PBTD	1JSPF .50" 4240-4290' GL.	Acidize w/10,000 gal 28% HCL 12,000 # 100 mesh sand	2 3/8"4.7# J-55 PVC lined set approx. 4137'	5 1/2" UNI-1 3.02 pkr. set approx 4140'	180/400#	600/850#
TLSAU SEC.31 9 I 31-T7S-R36E 2180' FSL & 660' FEL Elevation 4126.1' GR 4135' KB	I	282' 8 5/8" 24# J-55 in 12 1/4" hole 150sks cmt circ surf. 4326' GL 5 1/2" 14# J-55 7 7/8" hole.250sks cmt Top cmt 3470'by CE log.	1/19/68 2/6/68	4326' GL	1JSPF.50" 4282-4322' GL. (9-12-84) Reperf 1 JSPF 4282, 86, 88, 91, 94, 98 4300', 04, 12, 15, 17	Acidized w/3,000 gal 15% DS-30 Frac w/30,000gal lease oil & 30,000 # 20/40 mesh sand. (9-12-84)Reacidize w/2000gal 20% NEFE	2 3/8"4.7# J-55 PVC lined set approx. 4180'	5 1/2" UNI-1 3.02 pkr set appro. 4183'	140/400#	600/850#
TLSAU SEC.32 3 C 32-T7S-R36E 640' FNL & 1980' FWL Elevation 4123' GR	I	291' KB 8 5/8" 24# in 12 1/4" hole 150sks cmt. circ surf. 4320' 5 1/2" 14# in 7 7/8" hole. 275sks cmt.Top cm 3470' by CE log.	4/27/	4320' GL	9 shots 4274'-4297' (2-13-84)Reperforated 1JSPF .50" 4263'-4303'	Acidized w/ Phase 1 3000ga 15% DS-30 Phase 2 6000ga 15% DS-30 (2-13-84)Reacidize w/26bbls 28% HCl	2 3/8"4.7# J-55 PVC lined set approx. 4127'	5 1/2" UNI-1 3.02 pkr. set appro 4130'	180/400#	600/850#

TABULATED LIST OF DRILLING AND COMPLETION INFORMATION
TODD LOWER SAN ANDRES UNIT PROPOSED INJECTION WELLS AND WELLS WITHIN AREA OF REVIEW

11 name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) / Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
SAU SEC.31 3 C -T7S-R36E 0' FNL & 1650' FWL evation 4161' GR	I	254' 8 5/8" 24# in 12 3/4"hole 150sks cmt. circ surf. 4430' GL 4 1/2" 10.5# in 7 7/8"hole 250 sks cmt. Top cmt 3339'by temp survey.	Spud 10/31 64 Rntr 4/2 65 Comp 4/24 64	4440' KB 4354' PBTD	1JSPF 4257', 63, 67, 70, 74, 82, 90, 98 & 4302' 9 shots. (2/17/84) Reperf 1JSPF .50" 4252'-4302' 50 shots.	Acidize w/2000gal 15% HCl. Frac w/ 20,000gal gel lse oil 20,000# 20/40 sand (2/17/84)Reacidize w/24bbls 28% HCl	2 3/8"4.7# J-55 PVC lined set approx. 4167' GL	4 1/2" UNI-1 3.05 pkr set approx 4170' GL	160/400#	600/850#
SAU SEC.30 13 M)-T7S-R36E (Livaudais) 0.5' FWL & 660' FSL levation 4151' GR	P	285' 8 5/8" 24# in 12 1/4" hole 150sks cmt circ surf 4305' 5 1/2 14# in 7 7/8"hole 250sks cmt. Top cmt above 3950' by CE log	4/10 66 4/26 66	4315' KB	1JSPF .39" 4234', 39, 53, 57 62, 69, 75	Acidize w/1500gal 15% DS-30 Frac w/ 31,000gal lease crude31,000# 20/40 mesh sand				
LSAU SEC.29 14 N 9-T7S-R36E (Peterson) 60' FSL & 2180' FWL levation 4142' RDB	P	12 1/4"hole 8 5/8 set at 317' 275 sks cmt circ to surf. 7 7/8"hole 4 1/2" set at 4326' 300sks cmt Top of cemt 3482' by CE log	8/15 73 8/31 73	4326' KB	2JSPF 4249',54, 66-78,82-90 w/25JPF	Acidize w/1000gal 15% NE & fraced w/ 35,000 gal gel brine & 42,500# sand.				
LSAU SEC.29 15 O 9-T7S-R36E (Spradley) 60' FSL & 1980' FEL levation 4140' RDB	P	11"hole 8 5/8" 24# set at 329' 250sks cmt. circ surf. 4 1/2"9.5# set at 4330' 300 sks cmt Top of cmt 3600' by CE log	12/30 68 1/10 69	4330' KB	2JSPF 4263-72',80-96 w/25JPF	(2/19/70)Acidize w/4000gal 20%LSTNE frac w/30,000gal gel brine 1# 1 1/2# 20/40 mesh sand in 1st25,000 tail w/1# 10/20 in last 500gal.				

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TODD LOWER SAN ANDRES UNIT PROPOSED INJECTION WELLS AND WELLS WITHIN AREA OF REVIEW

Well name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
TLSAU SEC.29 16 P 29-T7S-R36E (Solsbery) 660' FSL & 660' FEL Elevation 4137' RDB	P	12 1/4" hole w/ 8 5/8" 24# set at 330' 250sks cmt Circ surf 7 7/8" hole 4 1/2" 9.5# set at 4363' 300 sks cmt. Top cmt 3600' by CE log	12/14 69 12/24 69	4363' KB	4305'-4319' w/25PF	Acidize w/4000gal of 20% fraced w/ 30,000gal gel brine & 35,000 20/40 mesh sand 5000 10/20				
TLSAU SEC.30 12 L 30-T7S-R36E (Livaudais) 611.3 FWL & 1980' FSL Elevation 4157' KB	P	12 1/4"hole 8 5/8 24# set at 281' 160sks cmt. Circ surf 7 7/8" hole 5 1/2" 15.5 set at 4290' 250sks cmt w/2% gel w/ 8# cacl per sk Top of cmt 3482' by CE log.	9/19 66 10/2 66	Open Hole 4305' GL	4232', 38, 43, 48, 57, 58, 63, 66 w/15PF	Acidize w/3000gal DS-30 fraced w/ 30,000gal crude oil & 30,000# 20/40 mesh sand.				
TLSAU SEC.30 16 P 30-T7S-R36E (Livaudais) 660' FSL & 660' FEL Elevation 4129' GR	P	12 1/4" hole w/ 8 5/8" 24# set at 292' KB 150sks cmt. Circ surf. 7 7/8" hole 5 1/2 14# set at 4296' KB 275sks cmt. w/ 2% gel 8# salt per sk. Top of 3850' CE log.	12/29 67 1/16 68	Open Hole 4305' GL	4239', 41, 43, 49, 52, 55, 60, 66, 71, 72 w/15PF 10/4/84 Reperforated .50 dia 1JSPF 4223'-4273'	Acidize w/3000gal DS-30sand/oil frac w/30,000gal oil & 30,000# 20/40 mesh sand. 10/4/84 Reacidized w/500gal zylene w/ 2000gal NEFE 20% 500# salt block & overflushed w/1000 gal 2% KCL water.				
TLSAU SEC.30 10 J 30-T7S-R36E (Val State) 1980' FSL & 1980' FEL Elevation 4151' KB	P	296'KB 8 5/8" 24# in 12 1/4" hole 150sks cmt. Circ surf.4293' 5 1/2 15.5 in 7 7/8" hole 250sks cmt Top of cmt 3582' by CE log.	12/30 66 1/15 67	4293'	1JSPF .42" 4236', 38, 44, 47, 51, 55, 63 4267'	Acidize w/3000gal frac w/30,000gal lease oil & 30,000# 20/40 mesh sand.				

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TODD LOWER SAN ANDRES UNIT PROPOSED INJECTION WELLS AND WELLS WITHIN AREA OF REVIEW

Well name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) / Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
TLSAU SEC.19 15 O 19-T7S-R36E (Hobbs Z) 660' FSL & 1980' FEL Elevation 4167' DF	P	357'KB 8 5/8"24# in 11"hole 250sks cmt. circ surf. 4318' 4 1/2"10.5# in 7 7/8"hole 350 sks cmt. Top cmt. 3600'by CE log	7/15 67 7/29 67	4318' PBTD 4287'	1JSPF 4243', 51, 55, 61, 64, 66, 73, 77, 4280'	Acidize w/3750gal 24% & 3000 gal treated water. fraced w/30,000gal lease oil 37,500# 20/40 sand.				
TLSAU SEC.31 10 J 31-T7S-R36E (Atl. Sm.) 2180' FSL & 1980' FEL Elevation 4136' GR 4146' KB	P	301'KB 8 5/8"24# in 12 1/4" hole 150sks cmt. circ surf 4333' 5 1/2" 15.5in 7 7/8"hole 240sks cmt. Top cmt 3700' by CE log.	11/1 67 11/15 84 11/27 67	4333' Taged Btm. 4310' GL 4320' KB	1JSPF 4280', 81, 86, 87, 90, 91, 96, 98, 4303', 13, 15 11/16/84 Reperforated 1JSPF 41' 4280'-4230'	Acidize w/3000gal 15%. 11/16/84 reacidize Acidize w/500gal zylene,2000gal 28% NEFE & 500# salt block overflushed w/1000gal 2% KCL water				
TLSAU SEC.31 2 B 31-T7S-R36E (SkelleySm) 519' FNL & 2121' FEL Elevation 4149.6 KB	P	290'KB 8 5/8" 20# in 12'hole 150sks cmt. circ surf. 4305'KB 4 1/2"9.5 # in 7 7/8" hole 300sks cmt.Top cmt 3706' CE log	7/5 67 8/1 67	4305' KB 11/6 84 4288 KB	1JSPF 4243'-4286'	Acidize w/3000gal DE-30 acid. Frac w/32,000gal oil, 32,000# 20/40 mesh sand & 900# Adomite Mark II				
TLSAU SEC.31 5 E 31-T7S-R36E (Hobbs Z) 1980' FNL & 661.1" FEL Elevation 4156' DF	P	350'8 5/8" 12 1/2 hole 200sks cmt. 4375' 4 1/2" in 7 7/8"hole 250 sks cmt. Top cmt above 3900'CE log	5/21 65 6/26 65	4375' PBTD 4364'	20 shots 4259'-4300.5 10/8/84 Reperforate w/.42 diam. 60 holes. 1JSPF 4244'-4304'	Acidize w/2000gal 15% frac w/20,000 gal lease oil & 20,000# sand. 10/8/84 Reacidize w/500gal Zylene 1500gal 20% NEFE 500# salt block w/500 acid flushed w/1000gal 2% KCL water.				

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TODD LOWER SAN ANDRES UNIT PROPOSED INJECTION WELLS AND WELLS WITHIN AREA OF REVIEW

Well name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
TLSAU SEC.31 11 K 31-T7S-R36E (Atl. Sm.) 2120' FSL & 2023' FWL Elevation	P	331' 8 5/8" 20# in 2 1/4" hole 225sks cmt. circ surf 4333.5 51/2 7 7/8"hole 250 sks cmt. Top of cmt above 3900' by CE log	7/8 68 7/16 68	4335' 4333.5 PBTD	1JSPF 4382', 84, 89, 91, 96, 4301', 07, 09, 12, 15, 17	Acidize w/3000gal 15% acid Frac w/ 30,000gal lease oil & 35,000# 20/40 sand.				
TLSAU SEC.31 12 L 31-T7S-R36E (State BC) 1980' FSL & 608.5' FWL Elevation 4155' KB 4144.5 GL	P	360.14' 8 5/8' 24# in 11" hole 200sks cmt.circ 4399.98' 4 1/2" in 7 7/8" hole 320sks cmt. Top cmt. 3400' by State Comp Form	7/18 65 8/1 65	4400' PBTD 4370'	1JSPF .41 size of 4281', 89, 96, 4299' & 4304' 1/29/85 Reperf 1JSPF .42 dia (4272'-4332')	Acidize w/2000gal 15% acid Frac w/ 20,000gal oil & 20/40 sand 1/30/85 Reacidized w/2000gal 28% NEFE 500# salt block w/ 500gal gel brine & overflushed w/1586 gal 2% KCL H2O at 2900# Max PSI Max BPM rate 5.6 BPM				
TLSAU SEC.32 4 D 32-T7S-R36E (Gates St.) 460' FNL & 660' FWL Elevation 4126.7 GR 4137.7 KB	P	298' 8 5/8" in 12 1/4" hole 150 sks cmt.circ surf 4306'KB 5 1/2" in 7 7/8"hole 250sks cmt.Top cmt.above 3950' by CE log	1/8 68 2/3 68	4306' KB	1JSPF 4244', 52, 54, 58, 61, 65, 68, 71, 78, 83, 86 10/30/84 Reperf 1JSPF 4304'-4244'	Acidize w/3500gal 15% DS-30 Frac w/ 30,000gal crude oil, 30,000# 20/40 sand 900# Adomite KB 4310' KBM 10/30/84 Reacidize w/500gal zylene, 2000gal 28% NEFE 500# salt block mixed w/250gal 2% KCL gel water & overflushed with 1000gal KCL water				

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Well name & Location	Well Type*	Casing Record	Date Drlg. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Injection Downhole Equipment		Proposed Inj. Rate (BPD) / Proposed Inj. Press.(PSI)	
							Tubing	Packer	Average	Maximum
TLSAU SEC.32 6 F 32-T7S-R36E (Gates St.) 1830' FNL & 1980' FWL Elevation 4127' KB 4117' GL	T	295' 8 5/8" in 12 1/4"hole 175 sks cmt.circ surf 4338' 4 1/2" in 7 7/8"hole 300sks cmt.Top cmt above 3950' by CBL	3/18 70 4/2 70	4338'	4282'84, 90, 92, 86, 96, 98	Acidized w/3000gal 15% DS-30				
TLSAU SEC.32 2 B 32-T7S-R36E (Roosevelt) 660' FNL & 1980' FEL Elevation 4139' KDB	P	363' 8 5/8" in 12 1/4" hole 255 sks cmt.circ surf 4 1/2" in 7 7/8" hole 900sks cmt. circ to surf.	2/27 69 3/18 69	4350' PBTD 4322' KB	2 JSPF 4231'-33' 4172'-74' 4119'-21'	Acidized w/2000gal 28% NEFE acid				
TLSAU SEC.32 7 G 32-T7S-R36E (Roosevelt) 1780' FNL & 1980' FEL Elevation 4128' GR	P	362' 8 5/8" 24# in 12 1/4" hole 225sks cmt. circ surf. 4400' 4 1/2 9.5# in 7 7/8" hole 1150sks cmt good returns of cmt. at surface	5/15 69 5/26 69	4400' PBTD 4366'	4JHPF 4318'-4324'	Acidized w/2000gal 28% NEFE acid				
TLSAU SEC.32 12 L 32-T7S-R36E (Roosevelt) 660' FWL & 2180' FSL Elevation 4131' KB	TA	293'KB in 12 1/4 hole 150sks cmt. circ surf. 4354' KB 5 1/2" in 7 7/8" hole. 250 sks cmt. Top of cmt. 3400' by State Comp Form	4/16 68 5/1 68	4354'	4300'06, 10, 13, 17, 26,27, 32, 34, 40, 44	Acidize w/3000gal 15% DS-30				

Hilbert

MURPHY OPERATING CORPORATION

ROSWELL PETROLEUM BUILDING

ROSWELL, NEW MEXICO 88201

MAILING ADDRESS
P. O. DRAWER 2648

TELEPHONE
505 623-7210

March 5, 1985

Mr. Jerry Sexton
Oil Conservation Division
Post Office Box 1980
Hobbs, New Mexico 88240

Re: Expansion of Existing Waterflood
Todd Lower San Andres Unit
Roosevelt County, New Mexico

Dear Mr. Sexton:

Pursuant to our conversation in mid-January 1985, enclosed please find a copy of the Affidavit of Publication as required by Form C-108 Section XIII.

The tabulated and schematic well data as required in Section VI is currently being finalized and will be forwarded to the Hobbs and Santa Fe office on or about March 14th, 1985, shortly after the 15th day notice period.

Thank you for your cooperation in this matter.

Sincerely,

MURPHY OPERATING CORPORATION

Mark B. Murphy
Vice President

MBM/bjf

Affidavit of Publication

LEGAL NOTICE

This shall constitute notice to all the world that Murphy Operating Corporation (United Bank Plaza, Suite 300, Post Office Box 2648, Roswell, New Mexico 88202-2648, Attention Mark B. Murphy, telephone number 505-623-7210) intends to convert the following wells from producing to injection service for the purpose of expanding the existing waterflood project, the Todd Lower San Andres Unit, located in Township 7 South, Range 36 East, NMPM, Roosevelt County, New Mexico.

Well No.	Sect.
29-13	29
30-15	30
31-1	31
31-7	31
32-5	32

Water will be injected into the P2 zone of the San Andres formation (between the depths of 4200' to 4350') at rates of approximately 250 BWPD and at maximum wellhead pressures not exceeding 850psi.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, Post Office Box 2088, Santa Fe, New Mexico 87501 within 15 days.

Published in Portales News-Tribune February 27, 1985 Legal No. 8842.

I, Scot Stinnett

Editor of

THE PORTALES NEWS-TRIBUNE

a newspaper of general paid circulation and entered under second class postal privilege in Roosevelt County, published daily, (except Saturday) at Portales, New Mexico, for the fifty-two (52) consecutive weeks preceding this date, do solemnly swear that a copy of the above notice, as per clipping attached, was published weekly in the regular and entire issue of said newspaper, and not in any supplement thereof for 1 consecutive weeks commencing with the issue dated February 27 19 85 and ending with the issue dated February 27 19 85

All publication costs having been paid.

Scot Stinnett

Subscribed and sworn to before me this 27th day of February 19 85

Lee Maris Barnett

Notary Public

My commission expires 3/7/87 19

PORTALES NEWS-TRIBUNE
101 East 1st Street - Box 848 - Phone 356-4481
Portales, New Mexico 88130

No.

Date 3-1 19 85

Received from Murphy operating corp

Ten 73/100

Dollars $ 10.73

For Legal # 8842

AMOUNT OF ACCOUNT $

AMOUNT PAID . . . $ 10.73 THANK YOU.

BALANCE DUE . . . $

CASH ☑ CHECK ☐ M. O. ☐

PORTALES NEWS-TRIBUNE

BY