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

Case 8628

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: TEXACO Inc.

Address: P. O. Box 728, Hobbs, New Mexico 88240

Contact party: W. B. Cade Phone: (505) 393-7191

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: W. B. Cade Title Dist. Operations Manager

Signature: W. B. Cade Date: April 30, 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.

APPLICATION FOR AUTHORIZATION TO INJECT

III. Well Data Sheet attached.

V. Map attached.

VI. Tabulation and P & A Schematics attached.

VII. 1. Average daily rate of salt water to be disposed is 3750 BPD, maximum daily rate of salt water to be disposed is 7500 BPD.

2. The salt water disposal system is closed.

3. Average injection pressure is 0 psig, maximum injection pressure is 100 psig.

4. Injected fluid and receiving formation fluid is the same.

5. Not applicable, formations are the same.

VIII. The proposed injection zone is the Yates-Seven Rivers which lies in the Lynch Yates-Seven Rivers pool, Lea County, New Mexico. This pool produces from two sources, the top of the Seven Rivers Reef and several sandstone stringers in the Yates. The top of the producing zone is at 3630' (+152 A.S.L.) with the proposed T.D. at 4200' (-418 A.S.L.) Gross Thickness is 570'.

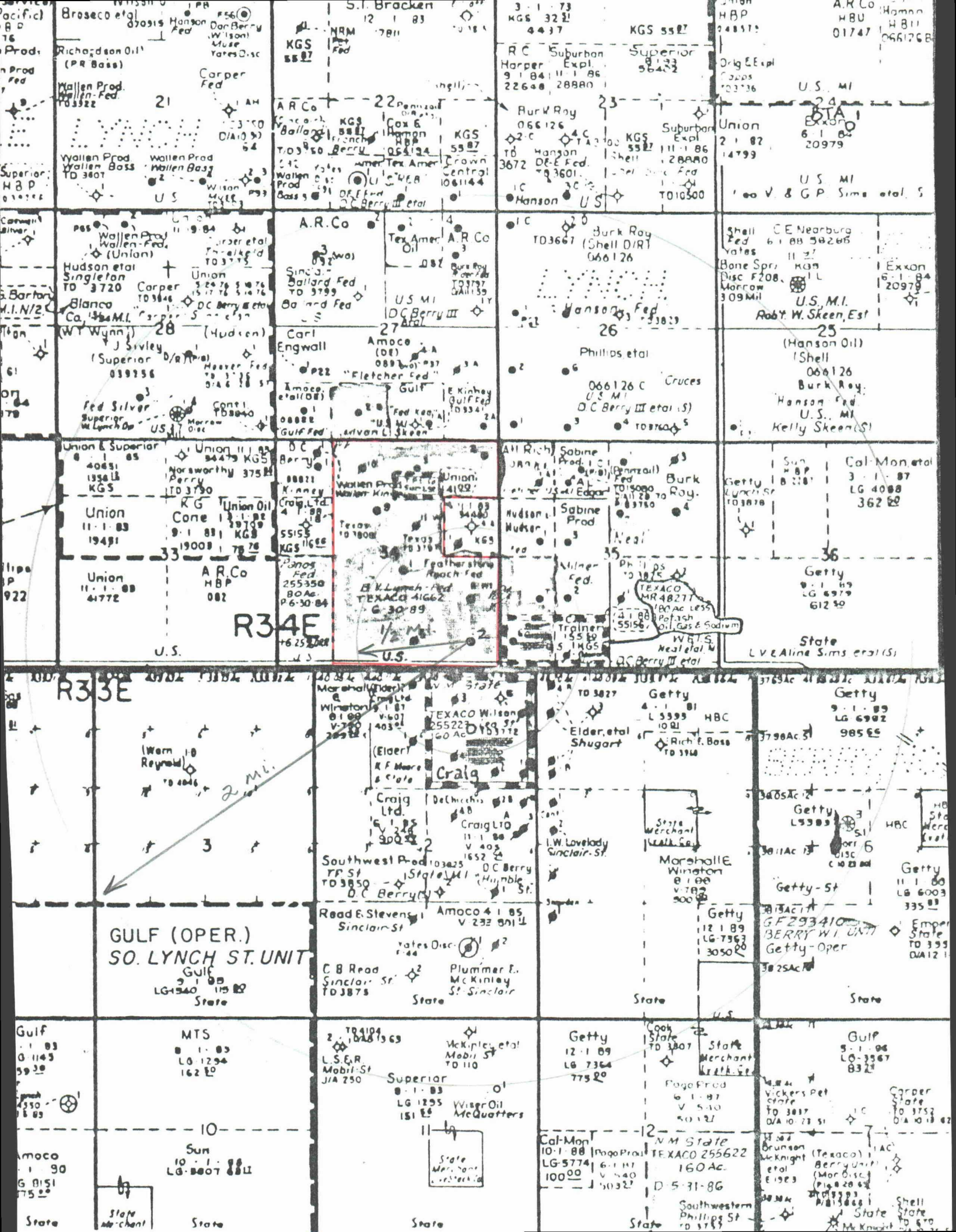
Known water aquifer in the area is the Ogallala. Water sands, as indicated in the Lea State No. 3, Unit B, Section 2, T-21S, R-33E, lie at 112' - 125' and 1095' - 1110'. There are no known fresh water sources underlying the proposed disposal zone.

IX. If necessary, acidize the openhole section with 1000 gallons of 15% NE-FE HCl.

X. Attached is a copy of the existing Gamma Ray/Neutron Log.

XI. Attached are water analysis on two fresh water wells in the area. The north fresh water well is location in Unit Letter A, Section 34, T-20S, R-34E. The south fresh water well is located in Unit Letter P, Section 34, T-20S, R-34E.

XII. Available geological and engineering data have been reviewed with no evidence of open faults or any other connection between the disposal zone and underground sources of drinking water to exists.


R34E
R33E
GULF (OPER.)
SO. LYNCH ST. UNIT
Gulf
LG-1540
State
TEXACO 41662
6-30-89
1/2 Mi.
2 Mi.
U.S.
Craig
Craig Ltd.
Craig LTD
Southwest Prod
Amoco 4-1-85
V-233 901
Read & Stevens
Sinclair St
C B Read
Sinclair St
TD 3875
Plummer E.
McKinley
St. Sinclair
Getty
LG 7363
3050
GF293410
BERRY W1 UNIT
Getty-Oper
Getty-St
Marshall E.
Winston
Elder, etal
Shugart
I.W. Lovelady
Sinclair-St
Richardson Oil
(PR Bass)
Broseco etal
Wallen Prod.
Wallen-Fed.
TD 3922
Wallen Prod
Wallen Bass
TD 3607
Corper
Fed
Hudson etal
Singleton
TD 3720
Blanco
Co.
Union
Corper
TD 3646
Fed Silver
Superior
Morrow
Union & Superior
Union
Union Oil
Cone
Union
Nonos
Fed
255350
80 Ac.
P 6-30-84
Texaco
Featherstone
Apach Fed
B.K. Lynch Fed
Texaco
Trainer
Sabine Prod
Burk Roy
Neal
Hudson
Milner
Fed.
Phillips
TEXACO
MR48277
160 Ac. Less
Potash
Oil, Gas & Sodium
W.R.S.
Neal etal
Getty
LG 6979
612
Cal-Mon etal
LG 4088
362
State
LV & Aline Sims etal (S)
Burk Roy
(Shell D/R)
066126
Hanson Fed
Phillips etal
066126 C
Cruces
U.S. MI
D.C Berry III etal (S)
Shell
066126
Burk Roy
Hanson Fed
U.S. MI.
Kelly Skeen (S)
Shell C.E. Nearburg
Fed 6-1-88 58286
Yates
Bone Spr
Disc F208
Morrow
309 Mil
U.S. M.I.
Robt. W. Skeen, Est
Exxon
6-1-84
20979
Union
2-1-82
14799
Exxon
6-1-84
20979
U.S. MI
V. & G.P. Sims etal
Hanson Oil
Shell
066126
Burk Roy
Hanson Fed
U.S. MI
Kelly Skeen (S)
Getty
9-1-89
LG 6982
985
Getty
LG 6003
335
Getty
12-1-89
LG-7363
3050
Getty
12-1-89
LG 7364
775
Pogo Prod
6-1-87
V 540
50
Cook State
TD 3807
State Merchant
Leath-Se
Cal-Mon
10-1-88
LG-5774
100
Pogo Prod
6-1-87
V 540
50
N.M. State
TEXACO 255622
160 Ac.
D 5-31-86
Southwestern
Phillips St
TD 3787
Gulf
5-1-96
LG-3567
83
Vickers Pet
State
TD 3837
Carper
State
TD 3753
Brunson
McKnight
etal
(Texaco)
Berry Unit
(Mor Disc)
Shell
State
McKnight
MTS
8-1-83
LG 1294
162
Sun
10-1-88
LG-8607
McKinley etal
Mobil St
TD 110
L.S.E.R.
Mobil St
J/A 750
Superior
8-1-83
LG 1295
151
Wiser Oil
McQuatters
Gulf
1-1-83
LG 1145
Amoco
1-1-90
LG 8151
Sun
10-1-88
LG-8607
Getty
9-1-89
LG 6982
985
Getty
LG 6003
335
Getty-St
Getty
State
TD 395
Getty
LG 6979
612
State
LV & Aline Sims etal (S)
Getty
LG 4088
362
Getty
LG 6979
612
State
LV & Aline Sims etal (S)

TABULATION OF PRODUCING WELLS

OPERATOR Lease/Well No.	Location	Date Drilled	Total Depth	Casing	Type	Completion Record
TEXACO Inc.						
B. V. Lynch "A" #6	Unit M, 660' FSL & 330' FWL, 35-20S-34E	7/52	3726'	5-1/2" @ 3666'	Oil-Prod Sub. Pump	Open Hole 3666' - 3726' 1972 - Acidized w/82 Gals. 20%. 1973 - Acidized w/6000 Gals. 15%.
B. V. Lynch "A" #7	Unit L, 1650' FNL & 990' FEL, 35-20S-34E	12/52	1) 3707' 2) Deepen to 3713' in 1956 3) Deepen to 3720' in 1959	5-1/2" @ 3670'	Oil-Prod	Open Hole 1) 3670' - 3707'. 1955 - Acidized w/2000 Gals 15% NE. 2) 3670' - 3713'-1956. 3) 3670' - 3720'-1959
B. V. Lynch "A" #1	Unit J, 2310' FSL & 2310' FEL, 34-20S-34E	3/29	3731'	13-3/4" @ 1002' 10" @ 1475' 8-5/8" @ 3373'	Oil-Prod Sub. Pump	Open Hole 3373' - 3731'. 1974 - Acidized w/9000 Gals. 15% NE
B. V. Lynch "A" #8	Unit I, 1651' FSL & 660' FEL, 34-20S-34E	1/53	3753' CIBP @ 3500' in 1982.	5-1/2" @ 3689'	T & A	Open Hole 3689' - 3753'. 1953 - Acidized w/4000 Gals. 1968 - Converted to SWD. 1971 - Added perforations: 3586' - 3611' 3642' - 3662' 1971 - Shut-in SWD. 1982 - T & A.
SABINE CORPORATION						
W. H. Milner Fed. #2	Unit K, 1650' FSL & 1650' FWL, 35-20S-34E	9/52	3747'	13-3/8" @ 123' 125 sxs. 5-1/2" @ 3695' 600 sxs.	Oil-Prod	Open Hole @ 3695' - 3747' No initial stimulation, low GOR. No record of any stimulation.

FORM C-104 - 5-83) 2-65N

TABULATION OF P & A WELLS

OPERATOR Lease/Well No.	Location	Date Drilled	Depth	Casing	Type	Completion Record
TEXACO INC.						
B. V. Lynch "A" #4	Unit H, 660' FEL & 1980' FNL, 34-20S-34E	12/34	3797'	15-1/2" @ 176' 12-1/2" @ 477' 10" @ 900' 8-1/4" @ 1636' Cemented w/75 sxs 7" @ 3713'	P & A	12/34 - Acidized 3739'- 46' w/1000 Gals. 12/34 - Acidized 3739'- 46' w/2000 Gals. 1/24/35 - P & A. Pulled all of 15-1/2" & 12-1/2" Casing, pulled 739' of 10", pulled 1064' of 8-1/4", pulled all of 7" casing; cement plug @ 3797'- 3575', Mud 3575' - 1700', cement 1700' - 1636', Mud 1636' - 0', Set dry hole marker.
B. V. Lynch "A" #5	Unit O, 660' FSL & 1980' FEL, 34-20S-34E	3/52	3798'TD 3781'PBTD	5-1/2" @ 3705' 2-7/8" Casing Cemented Inside 5-1/2" @ 3759' (7/60).	P & A	5-1/2" cemented w/1650 sxs - Circulated. 2/12/52 - Acidized Open Hole @ 3705'- 3759' w/5000 Gals. 15%. 7/60 - Acidized perforations @ 3600'- 3636' & 3660'- 3683' w/500 Gals acid & Frac w/10,000 Gals Ref. Oil & 15,000# sand. 1/6/62 - P & A. Pumped 110 sxs Reg. cmt down 2-7/8" casing and 5 sxs at surface.
FEATHERSTONE-GALE						
Roach Federal #1	Unit H, 2310' FNL & 990' FEL, 34-20S-34E	2/58	3772'	9-5/8" @ 330' Cemented w/225 sxs. Circulated. 7" @ 3571' Cemented w/450 sxs Est. TOC @ 1426'.	P & A	12/3/60 - Plugged and Abandoned. No other records on P & A.

TABULATION OF P & A WELLS

OPERATOR Lease/Well No.	Location	Date Drilled	Total Depth	Casing	Type	Completion Record
EOB ENERGY CORP.						
Lea State #6	Unit A, 833' FEL & 660' FNL, 2-21S-33E	12/70	3779'	10-3/4" @ 151' Cemented w/100 sxs Cement Circulated. 5-1/2" @ 3713' Cemented w/100 sxs Est. TOC @ 3225'	P & A	Open Hole @ 3713' - 3779'. Perforations @ 3691' - 3693' & 3705' - 3712'. 10/77 - P & A. Load hole w/10# brine & 67 sxs S.W. Gel, 65-sx plug @ 1595' - 1800' 300 sxs Circulated from 300' to surface, set dry hole marker.
PAUL H. LAVERTY						
Ralph Shugart Lease #2	Unit D, 990' FNL & 330' FWL, 1-21S-33E	1/10/52	3763'	13-3/8", 55# @ 105', 125 sxs. 5-1/2" @ 3700' 14#, 400 sxs.	P & A	No initial stimulation. T.A. 7/55. 3-21-60 - Plugged back @ 3763'- 3642' w/ 30 sxs cement. Ran gelled mud @ 0'- 3642'. Capped well w/10 sxs cement.
Ralph Shugart Lease #4	Unit D, 330' FNL & 330' FWL, 1-21S-33E	12/53	3770'	13-3/8",68#,@ 135' 10-3/4",42#,@ 795' 8-5/8", 32# @ 1243' 5-1/2", 14# @ 3739' Cement Circulated.	P & A	No initial stimulation. 3/22/60 - Plugged back @ 3770' - 3655' w/ 30 sxs cement. Ran gelled mud to surface. Capped w/10 sxs cement.
MALLARD PETROLEUM, INC.						
Moore State #1	Unit F, 1650' FNL & 2310' FWL, 2-21S-33E	8/51	3807'	13-3/8" @ 155' 125 sxs. 5-1/2" @ 3735' 400 sxs Cement top @ 1250'	P & A	Acidized on open hole @ 3725' - 3807'. 6/19/69 - Set CIBP @ 3653' w/2 sxs cement on top. Filled hole w/mud, then set 10 sxs @ surface.
Moore State #2	Unit C, 330' FNL & 2310' FWL, 2-21S-33E	8/51	3780'	13-3/8" @ 133' 125 sxs 5-1/2" @ 3706' 400 sxs	P & A	Open Hole @ 3706' - 3780'. No treatment. 6/19/69 - Set CIBP @ 3634' w/2 sxs cement on top. Filled hole w/mud, then set 10 sxs @ surface.

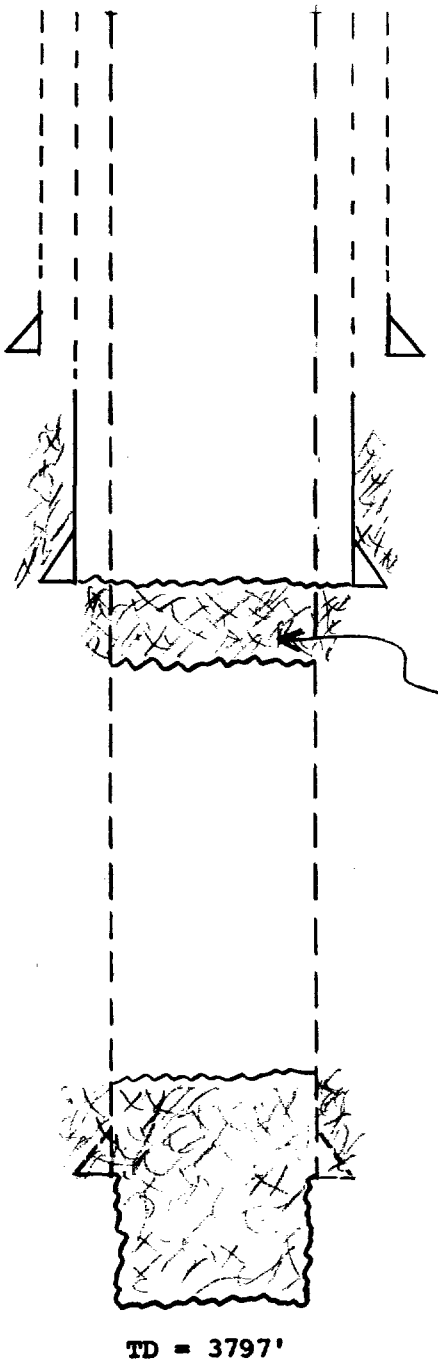
FORM C-10 (REV 3-55)

TABULATION OF P & A WELLS

OPERATOR Lease/Well No.	Location	Date Drilled	Total Depth	Casing	Type	Completion Record
B. N. MUNCY, JR.						
Lea State #5	Unit A, 990' FNL & 330' FEL 2-21S-33E	5/52	3753'	5-1/2" @ 3731' w/1400 sxs. Cement Circulated	P & A	Open Hole @ 3731' - 3753'. No treatment. 1/1967 - Perforated 3608', 3614', 3622', 3628', 3633', 3639', 3646', 3653', 3659', 3664', 3670', 3677', 3683', 3692', 3706', 3714', 3720', 3728', and 3732', acidized w/2200 gals. acid. 3/1969 - Deepened to 3784' and acidized w/ 6 acid sticks. 10/1977 - P & A. Loaded hole w/10# brine and 10 sxs S.W. gel. Pumped 40 sxs cement at 960' - 1200', 10 sxs cement @ surface and dry hole marker.
Lea State #3	Unit B, 660' FNL & 1980' FEL 2-21S-33E	9/32	3783' 3616'PBTD	12-1/2" @ 130' Cemented w/30 sxs 8-1/4" @ 1705' Cemented w/575 sxs 6-1/4" @ 3632' Cemented w/75 sxs	P & A	8/58 - Set CIBP @ 3616', perforated-3548'-64 3588' - 3606'. Acidized w/500 gals 15% acid and fraced w/10,000 gals. Ref. Oil & 10,000# sand. 10/77 - P & A. Load hole w/10# brine & 25 sxs S.W. gel, spot 35 sxs Class "C" @ 3616' - 3445', spot 35 sxs Class "C" @ 1850' - 1950'; shot casing off @ 1613' and pulled, spot 35 sxs Class "C" @ 1544' - 1650', 10 sxs @ Surface. Set dry hole marker.

B.V. LYNCH "A", NO. 4
1980' FNL & 660' FEL, SEC. 34, T20S, R34E
Texaco, Inc.

PLUGGED AND ABANDONED 1-24-35



Mud @ 1636' - 0'

10" csg. @ 900' - Pulled 739', 161' In Hole

8 1/4" csg. @ 1636', Cemented w/ 75 sxs., Est. TOC @ 1509'
Pulled 1064' of 8-1/4" csg., 572' In Hole

Cement Plug @ 1700' - 1636'

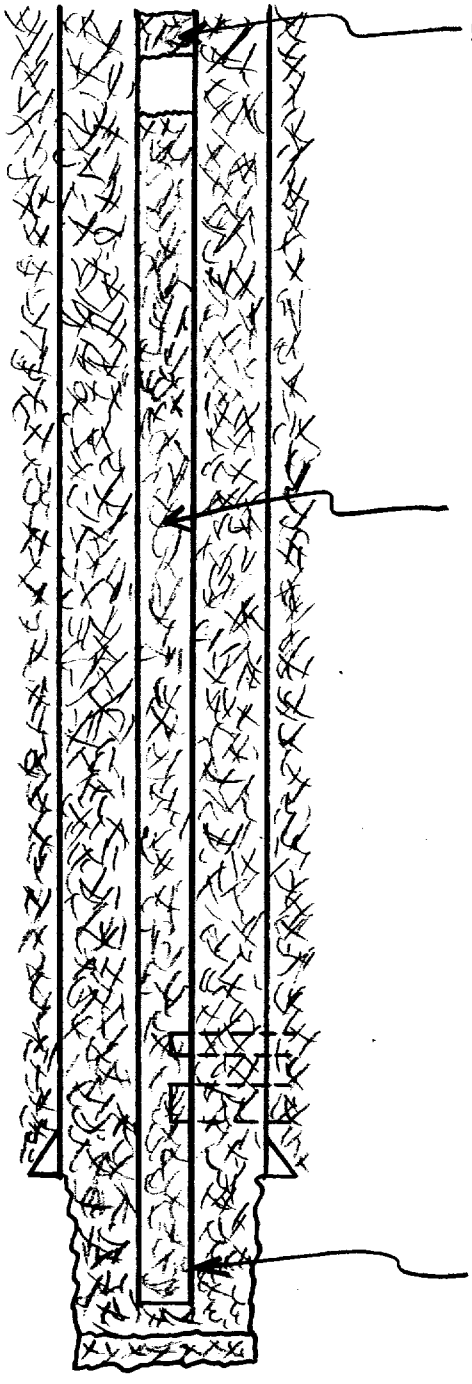
Mud @ 3575' - 1700'

7" @ 3713', Pulled all 7" csg.
Cement Plug @ 3797' - 3575'
O.H. 3713' - 3797'

TD = 3797'

B.V. LYNCH "A", NO. 5
660' FSL & 1980' FEL, SEC. 34, T20S, R34E
Texaco, Inc.

PLUGGED AND ABANDONED 1-6-62



5 sxs. Cement, 0' - 154'

110 sxs. Cmt, Est. TOC @ 374'

Kay.

Perfs: 3600' - 36'
3660' - 83'

5-1/2" csg. @ 3705' Cemented w/ 1650 sxs., Circ.

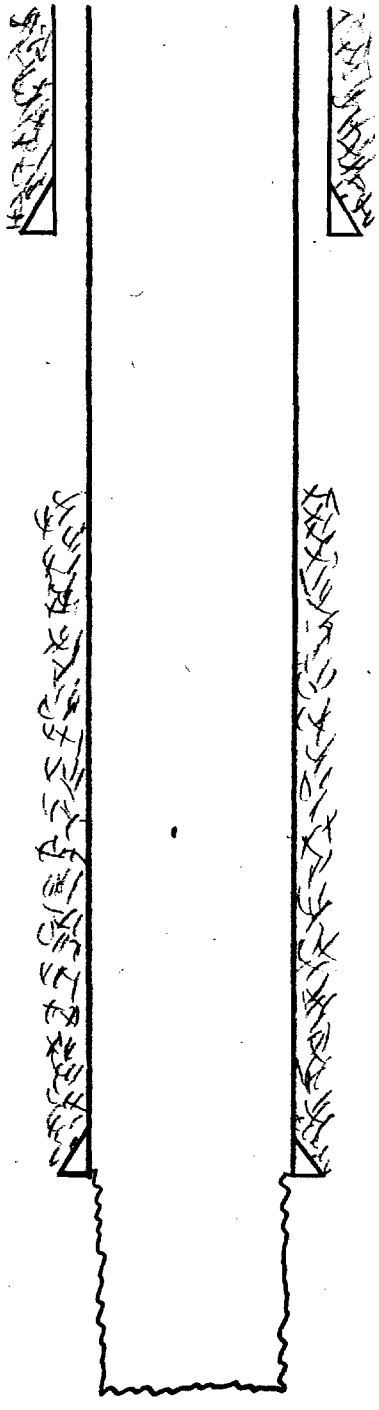
2-7/8" csg. @ 3759', Cement Circ.

TD = 3798'

PBTD = 3781'

ROACH FED, NO. 1
2310' FNL & 990' FEL, SEC. 34, T20S, R34E
FEATHERSTONE - GALE

PLUGGED AND ABANDONED * 12-3-60



9-5/8" @ 330', Cemented w/ 225 sxs., Circ.

7" @ 3521', Cemented w/ 450 sxs., Est. TOC @ 1426'

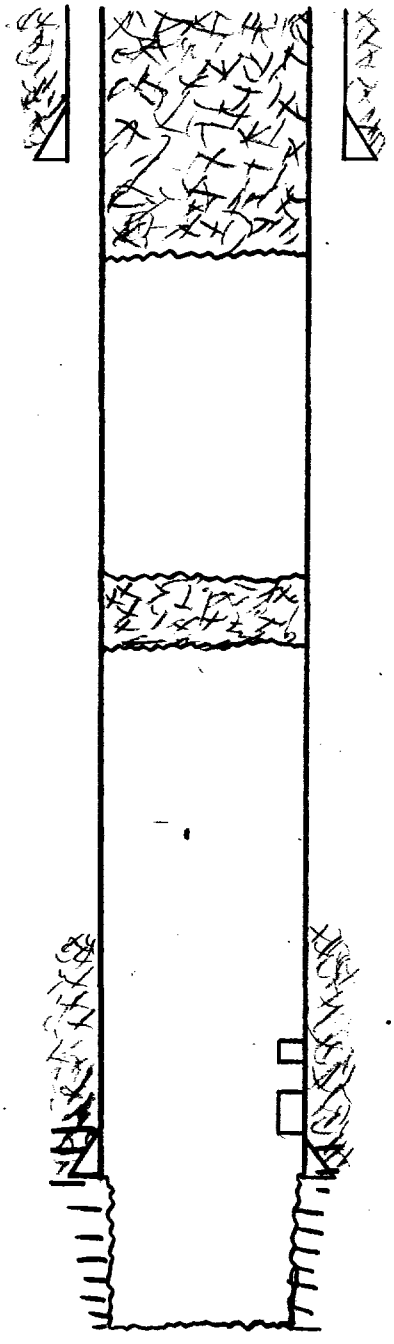
O.H. 3521' - 3772'

TD = 3772'

*Well was P&A 12-3-60, No Plugging Details Given

LEA STATE, NO. 6
833' FEL & 660' FNL, SEC. 2, T21S, R33E
EOB Energy Corp.

PLUGGED AND ABANDONED 10-77



10-3/4" csg. @ 151', Cemented w/ 100 sxs., Circ.

Cement Plug @ 300' - 0'

Cement Plug @ 1595' - 1800'

Perfs: 3691' - 93'
3705' - 12'

5-1/2" csg. @ 3713', Cemented w/ 100 sxs., Est. TOC @ 3225'

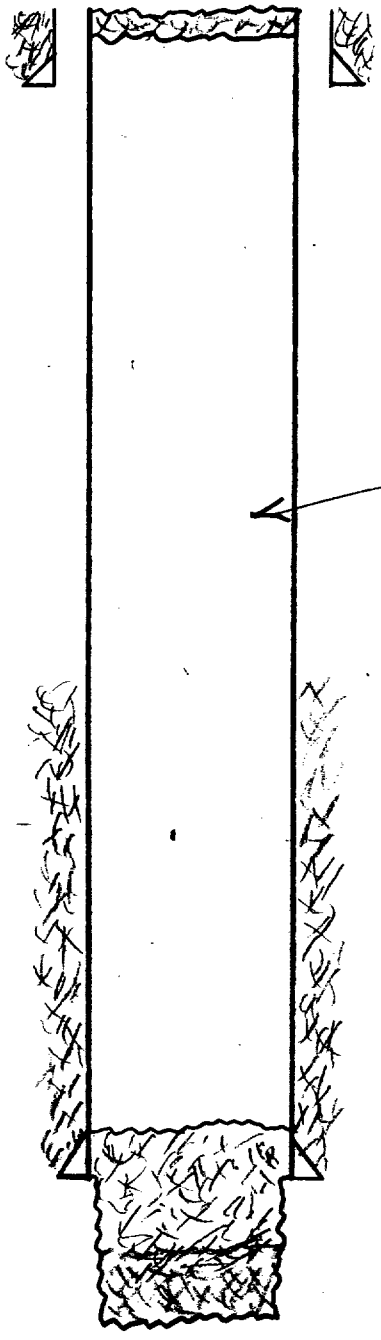
O.H. 3713' - 3779'

May be a problem.

TD = 3779'

RALPH SHUGART, NO. 2
990' FNL & 330' FWL, SEC. 1, T21S, R33E
Paul H. Laverty

PLUGGED AND ABANDONED 3-21-60



10 sxs. Cement Plug @ Surface

13-3/8" csg. @ 105', Cemented w/ 125 sxs.

Mud @ 3642' - 0'

Probably okay

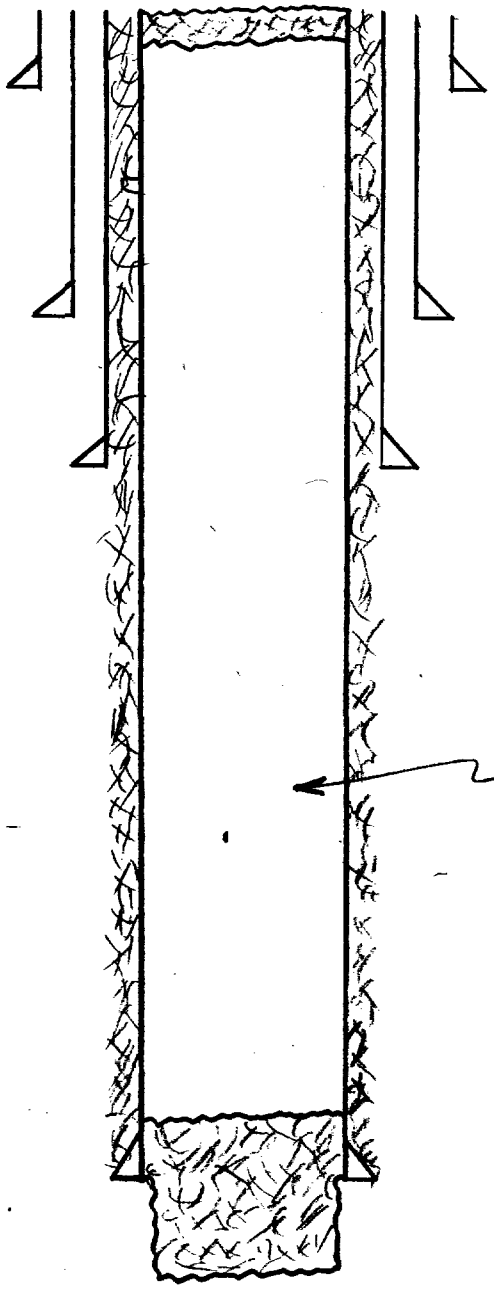
5-1/2" csg. @ 3700', Cemented w/ 400 sxs., Est. TOC @ 2084'

Cement Plug @ 3763' - 3642'

TD = 3763'

RALPH SHUGART, NO. 4
330' FNL & 330' FWL, SEC. 1, T21S, R33E
Paul H. Laverty

PLUGGED AND ABANDONED 3-22-60



10 sxs. Cement, Surface Plug

13-3/8" csg. @ 135'

10-3/4" csg. @ 795'

8-5/8" csg. @ 1243'

Gelled Mud @ 3655' - 0'

5-1/2" csg. @ 3739', Cement Circ.

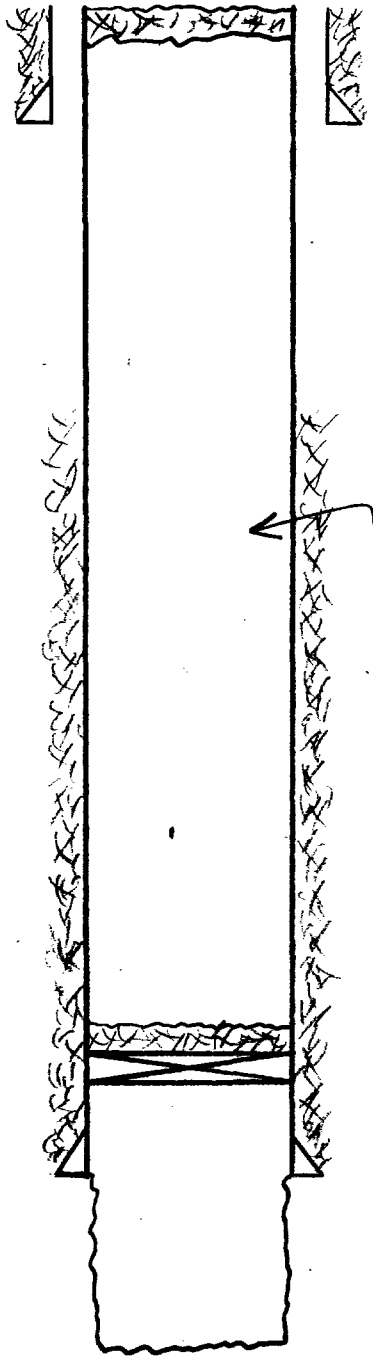
O.H. 3739' - 3770'
Cement Plug @ 3770' - 3655'

TD = 3770'

Inj. int. plugged.
Okay.

MOORE STATE, NO. 1
1650' FNL & 2310' FWL, SEC. 2, T21S, R33E
Mallard Petr., Inc.

PLUGGED AND AGANDONED 6-19-69



10 sxs. Cement Surface Plug

13-3/8" @ 155', Cemented w/ 125 sxs.

Mud

Okay.

CIBP @ 3653' w/ 2 sxs. Cement on Top

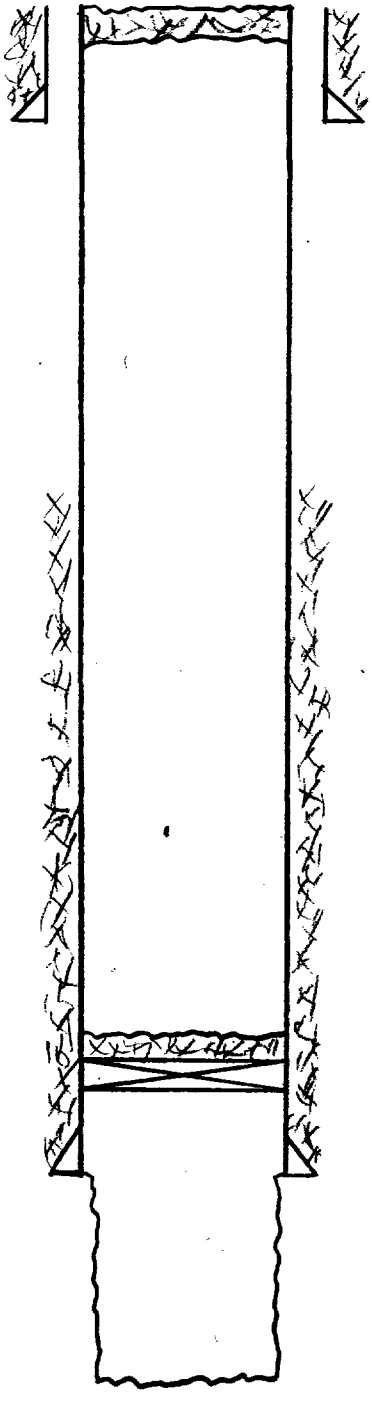
5-1/2" csg. @ 3725', Cement w/ 400 sxs., TOC @ 1250'

O. H. @ 3725' - 3807'

TD = 3807'

MOORE STATE, NO. 2
330' FNL & 2310' FWL, SEC. 2, T21S, R33E
Mallard Petr., Inc.

PLUGGED AND ABANDONED 6-19-69



10 sxs. Cement Surface Plug

13-3/8" csg. @ 133', Cemented w/ 125 sxs.

okay.

CIBP @ 3634' w/ 2 sxs Cement on Top

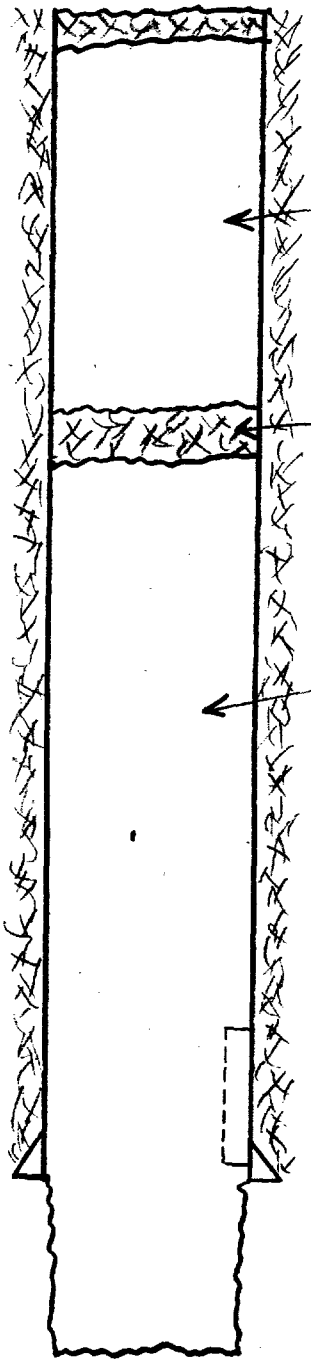
5-1/2" csg. @ 3706', Cemented w/ 400 sxs., Est. TOC @ 2090'

O.H. 3706' - 3780'

TD = 3780'

LEA STATE, NO. 5
990' FNL & 330' FEL, SEC. 2, T21S, R33E
B. N. Muncy, Jr.

PLUGGED AND ABANDONED 10-77



10 sxs. Cement Surface Plug

Mud

Cement Plug @ 960' - 1200'

Mud

Drilled
5-52
May be a problem

Perfs: 3608' - 3732'

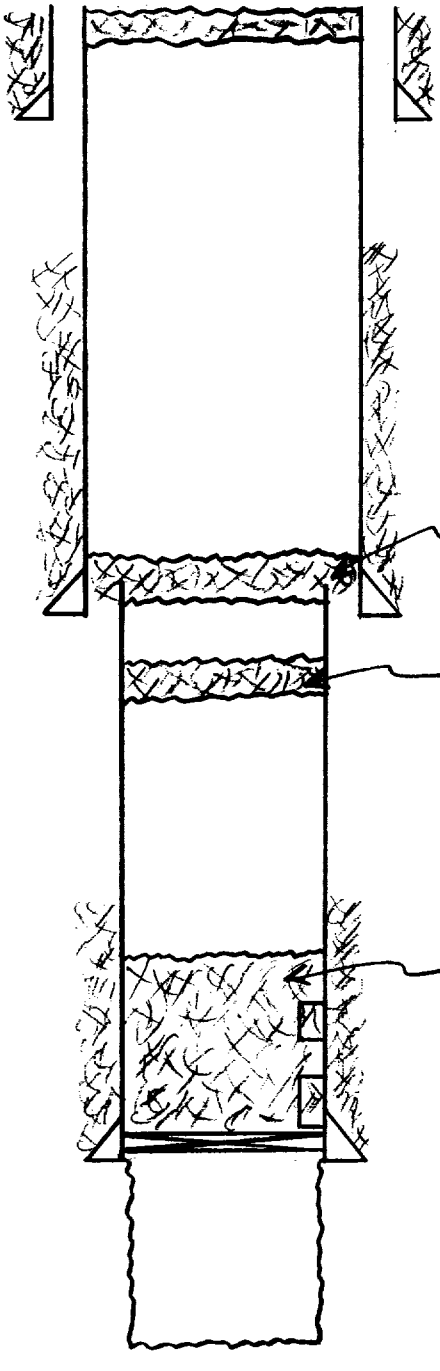
5-1/2" csg. @ 3731', Cemented w/ 1400 sxs., cmt. circ.

O.H. 3731' - 3753'

TD = 3753'

LEA STATE, NO. 3
660' FNL & 1980 FEL, SEC. 2, T21S, R33E
B.N. Muncy, Jr.

PLUGGED AND ABANDONED 10-77



10 sxs. Cement Surface Plug

12-1/2" csg. @ 130', Cemented w/ 30 sxs.

okay

Cement Plug @ 1544' - 1650'
6-1/4" csg. Shot off @ 1613' & Pulled
8-1/4" csg. @ 1705', Cemented w/ 575 sxs.,
Est. TOC @ 730'

Cement Plug @ 1850' - 1950'

Cement Plug @ 3616' - 3445'
Perfs: 3548' - 64'
3588' - 3606'

6-1/4" csg. @ 3632', Cemented w/ 75 sxs., Est.
TOC @ 3218'
CIBP @ 3616'
O.H. 3632' - 3783'

TD = 3783'

WATER ANALYSIS REPORT

NL Treating Chemicals/NL Industries, Inc.
P. O. Box 4305 Houston, Texas 77210

SHEET NUMBER

COMPANY Gulf Coast

DATE 11/9/84

FIELD

COUNTY OR PARISH

STATE

LEASE OR UNIT B.V. Lynch

WELL(S) NAME OR NO. South Well

WATER SOURCE (FORMATION) Wilcox

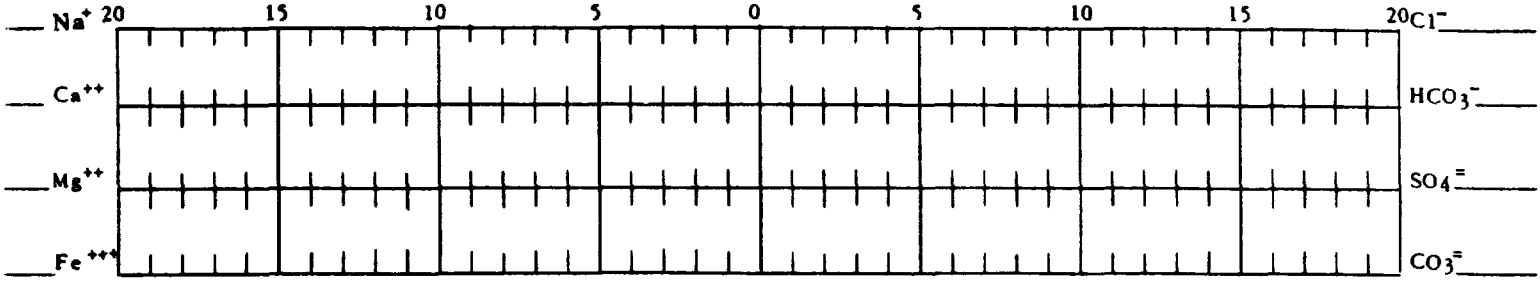
DEPTH, FT.	BHT, F	SAMPLE SOURCE	TEMP, F	WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY

DATE SAMPLED

TYPE OF WATER
☐ PRODUCED ☐ SUPPLY ☐ WATERFLOOD ☐ SALT WATER DISPOSAL

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT)



DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*
Total Hardness	1	
Calcium, Ca^{++}	.9	18
Magnesium, Mg^{++}	.1	1.2
Iron (Total) Fe^{+++}		
Barium, Ba^{++}		
Sodium, Na^{+}(calc.)	51.7	1189.1

ANIONS	me/l*	mg/l*
Chloride, Cl^{-}	50.7	1800
Sulfate, $SO_4^{=}$	0	0
Carbonate, $CO_3^{=}$		
Bicarbonate, HCO_3^{-}	2	122
Hydroxyl, OH^{-}		
Sulfide, $S^{=}$	>1	

DISSOLVED GASES

Hydrogen Sulfide, H_2S	_____ mg/l*
Carbon Dioxide, CO_2	_____ mg/l*
Oxygen, O_2	_____ mg/l*

PHYSICAL PROPERTIES

pH	7.7
Eh (Redox Potential)	_____ MV
Specific Gravity	_____
Turbidity, JTU Units	_____
Total Dissolved Solids (calc.)	3120 mg/l*
Stability Index @____F	_____
@____F	_____
$CaSO_4$ Solubility @____F	_____ mg/l*
@____F	_____ mg/l*
Max. $CaSO_4$ Possible (calc.)	_____ mg/l*
Max. $BaSO_4$ Possible (calc.)	_____ mg/l*
Residual Hydrocarbons	_____ ppm(Vol/Vol)

SUSPENDED SOLIDS (QUALITATIVE)

Iron Sulfide ☐ Iron Oxide ☐ Calcium Carbonate ☐ Acid Insoluble ☐

*NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

REMARKS AND RECOMMENDATIONS:

Background Information

ENGINEER	DIST. NO.	ADDRESS	OFFICE PHONE	HOME PHONE
	821			
ANALYZED	DATE	DISTRIBUTION		

DISTRIBUTION ☐ CUSTOMER ☐ AREA OR ☐ DISTRICT OFFICE ☐ BTC ENGINEER OR ☐ BTC LAB ☐ BTC SALES SUPERVISOR

WATER ANALYSIS REPORT

NL Treating Chemicals/NL Industries, Inc.
P. O. Box 4305 Houston, Texas 77210

			SHEET NUMBER
COMPANY: Texaco - Getty			DATE: 11/9/84
FIELD	COUNTY OR PARISH		STATE
LEASE OR UNIT: B.V. Lynch	WELL(S) NAME OR NO.: North well	WATER SOURCE (FORMATION)	

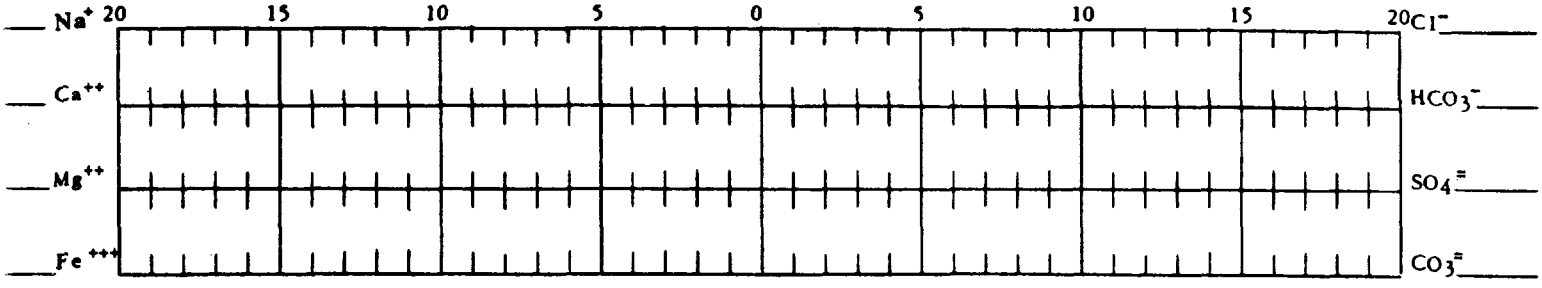
DEPTH, FT.	BHT, F	SAMPLE SOURCE	TEMP, F	WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY

DATE SAMPLED:

TYPE OF WATER: ☐ PRODUCED ☒ SUPPLY ☐ WATERFLOOD ☐ SALT WATER DISPOSAL

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT)



DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*
Total Hardness	.6	
Calcium, Ca^{++}	0.2	4.0
Magnesium, Mg^{++}	0.4	4.9
Iron (Total) Fe^{+++}		
Barium, Ba^{++}		
Sodium, Na^{+}(calc.)	68.6	1577.8

ANIONS	me/l*	mg/l*
Chloride, Cl^{-}	45.1	1600
Sulfate, $SO_4^{=}$	18.2	875
Carbonate, $CO_3^{=}$	3.8	114.0
Bicarbonate, HCO_3^{-}	2.1	128.1
Hydroxyl, OH^{-}		
Sulfide, $S^{=}$	> 1	

DISSOLVED GASES

Hydrogen Sulfide, H_2S	_____ mg/l*
Carbon Dioxide, CO_2	_____ mg/l*
Oxygen, O_2	_____ mg/l*

PHYSICAL PROPERTIES

pH	9.0
Eh (Redox Potential)	_____ MV
Specific Gravity	
Turbidity, JTU Units	
Total Dissolved Solids (calc.)	4303 mg/l*
Stability Index @____F	
@____F	
$CaSO_4$ Solubility @____F	_____ mg/l*
@____F	_____ mg/l*
Max. $CaSO_4$ Possible (calc.)	_____ mg/l*
Max. $BaSO_4$ Possible (calc.)	_____ mg/l*
Residual Hydrocarbons	_____ ppm(Vol/Vol)

SUSPENDED SOLIDS (QUALITATIVE)

Iron Sulfide ☐ Iron Oxide ☐ Calcium Carbonate ☐ Acid Insoluble ☐

*NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

REMARKS AND RECOMMENDATIONS:

Background information

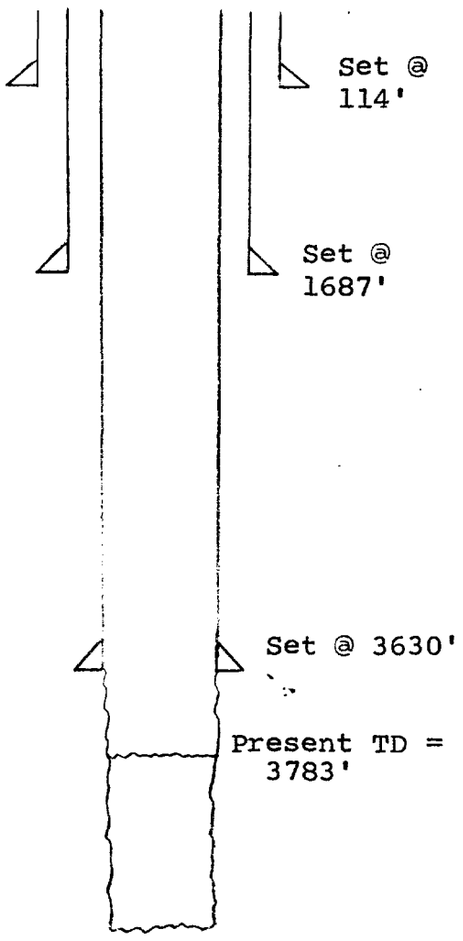
C ENGINEER	DIST. NO.	ADDRESS	OFFICE PHONE	HOME PHONE
ALYZED	DATE	DISTRIBUTION ☐ CUSTOMER ☐ AREA OR ☐ DISTRICT OFFICE ☐ BTC ENGINEER OR ☐ BTC LAB ☐ BTC SALES SUPERVISOR		

TC-10

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
TEXACO Inc.	B. V. Lynch "A" Federal			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
2	660' FEL & 660' FSL	34	20-S	34-E

Schematic



Tabular Data

Surface Casing

Size 20 " Cemented with 6 sx. @BTM
16 sxs @ Top

TOC _____ feet determined by _____

Hole size N.A.

Intermediate Casing

Size 8-1/4" " Cemented with 75 sx.

TOC 971 feet determined by Calc. 70% fill.

Hole size 9-1/2" Est.

Long string

Size 5-1/2" " Cemented with 70 sx.

TOC 2938 feet determined by Calc. 70% fill.

Hole size 6-3/4" Est.

Total depth 4200', Proposed
3783', Present

Injection interval

3630 feet to 4200 feet, open hole.

NOTE: Will run CBL, perforate above TOC in 5-1/2" string and cement squeeze.

Tubing size 2-3/8" lined with TK-75 (material) set in a

5-1/2" Baker LokSet, nickel plated (brand and model) packer at 3500 + feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Yates Seven Rivers

2. Name of Field or Pool (if applicable) Lynch Yates Seven Rivers

3. Is this a new well drilled for injection? [ ] Yes [X] No

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

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) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None in the Area of interest.

Texaco USA

PO Box 728
Hobbs NM 88240
505 393 7191

May 15, 1985

OFFSET OPERATORS
(Address List Attached)

Gentlemen:

Attached is a copy of Texaco Inc's. "Application For Authorization To Inject" Form C-108, on the B. V. Lynch "A" Federal Well No. 2, located 660' FEL and 660' FSL, Section 34, T-20-S, R-34-E, Lea County, New Mexico. The subject well is to be deepened and converted to injection in the Seven Rivers and Yates formation. This Application is being mailed to you per Rule 701-B(2) and will not require any action on your part unless an objection is entered.

Yours very truly,

W. B. Cade

W. B. CADE
District Operations Manager

DBW:JEB

Attachments

OFFSET OPERATORS

B. V. LYNCH "A" FEDERAL LEASE
LEA COUNTY, NEW MEXICO

Amoco Production Company
P. O. Box 4381
Houston, Texas 77210

Phillips Petroleum Compay
4001 Penbrook
Odessa, Texas 79762

Hudson & Hudson
1440 First United Tower
Fort Worth, Texas 76102

Marshall & Winston
P. O. Box 874
Midland, Texas 79702

Arco Oil & Gas Company
P. O. Box 2819
Dallas, Texas 75221

Arco Oil & Gas Company
P. O. Box 1610
Midland, Texas 79702

Mobil Producing Texas-NM, Inc.
P. O. Box 633
Midland, Texas 79702

Gulf Oil Corporation
P. O. Box 4232
Odessa, Texas 79760

Earl M. Craig, Jr.
P. O. Box 1351
Midland, Texas 79702

Pogo Producing Company
P. O. Box 61289
Houston, Texas 77208

Union Oil of California
300 N. Carrizo
Midland, Texas 79701

Texaco USA
PO Box 728
Hobbs NM 88240
505 393 7191

May 15, 1985

Mr. W. G. Brittian
2407 Gulf
Midland, Texas 79705

RE: APPLICATION TO INJECT
FORM C-108
B. V. LYNCH 'A' FEDERAL
WELL NO. 2
LEA COUNTY, NEW MEXICO

Dear Sir:

Attached is a copy of Texaco Inc's. "Application For Authorization To Inject" Form C-108, on the B. V. Lynch "A" Federal Well No. 2, located 660' FEL and 660' FSL, Section 34, T-20-S, R-34-E, Lea County, New Mexico. The subject well is to be deepened and converted to injection in the Seven Rivers and Yates formation. This Application is being mailed to you as a Surface Owner, per Rule 701-B(2), and will not require any action on your part unless an objection is entered.

Yours very truly,

W.B. Cade

W. B. CADE
District Operations Manager

DBW:JEB

Attachments

P 656 275 265

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Marshall & Winston	
Street and No. P. O. Box 874	
P.O., State and ZIP Code Midland, TX 79702	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982 ★ U.S.G.P.O. 1983-403-517

P 656 275 [illegible]

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Phillips Petroleum Co.	
Street and No. 4001 Penbrook	
P.O., State and ZIP Code Odessa, TX 79762	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982 ★ U.S.G.P.O. 1983-403-517

P 656 275 269

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mobil Prod.TX.NM, Inc.	
Street and No. P. O. Box 633	
P.O., State and ZIP Code Midland, TX 79702	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982 ★ U.S.G.P.O. 1983-403-517

P 656 275 262

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Amoco Production	
Street and No. P.O.Box 4381	
P.O., State and ZIP Code Houston, TX 77210	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, Feb. 1982 ★ U.S.G.P.O. 1983-403-517

P 656 275 272

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	Pogo Producing Co.
Street and No.	P. O. Box 61289
P.O., State and ZIP Code	Houston, TX 77208
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

★ U.S.G.P.O. 1983-403-517

PS Form 3800, Feb. 1982

P 656 275 271

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	Earl M. Craig, Jr.
Street and No.	P. O. Box 1351
P.O., State and ZIP Code	Midland, TX. 79702
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

★ U.S.G.P.O. 1983-403-517

PS Form 3800, Feb. 1982

P 656 275 274

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	W. G. Brittian
Street and No.	2407 Gulf
P.O., State and ZIP Code	Midland, TX 79705
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

★ U.S.G.P.O. 1983-403-517

PS Form 3800, Feb. 1982

P 656 275 273

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	Union Oil of California
Street and No.	300 N. Carrizo
P.O., State and ZIP Code	Midland, TX. 79701
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

★ U.S.G.P.O. 1983-403-517

PS Form 3800, Feb. 1982

P 656 275 270

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Gulf Oil Corporation	
Street and No. P. O. Box 4232	
P.O., State and ZIP Code Odessa, TX. 79760	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

* U.S.G.P.O. 1983-403-517
PS Form 3800, Feb. 1982

P 656 275 264

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Hudson & Hudson	
Street and No. 1440 First United Tower	
P.O., State and ZIP Code Fort Worth, Texas 76102	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

* U.S.G.P.O. 1983-403-517
PS Form 3800, Feb. 1982

P 656 275 267

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Arco Oil & Gas Co.	
Street and No. P. O. Box 1610	
P.O., State and ZIP Code Midland, Texas 79702	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

* U.S.G.P.O. 1983-403-517
PS Form 3800, Feb. 1982

P 656 275 266

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Arco Oil & Gas Co	
Street and No. P. O. Box 2819	
P.O., State and ZIP Code Dallas, Texas 75221	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

* U.S.G.P.O. 1983-403-517
PS Form 3800, Feb. 1982