

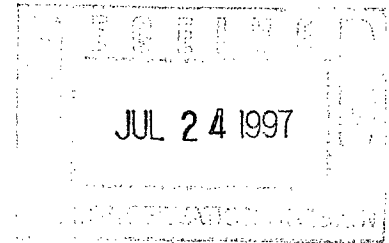
DHC 8/13/97

# Chateau Oil and Gas, Inc.

July 22, 1997

William J. LeMay  
New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, New Mexico 87505-6429

1667



**Re: Application for Administrative Approval of Downhole Commingle  
for Chateau Oil and Gas, Inc. Kaufman No. 1E,  
Basin Dakota/Flora Vista Gallup Dual  
857' FSL & 1827' FEL  
Sec 33, T31N, R13W, , San Juan County, New Mexico**

Dear Mr. LeMay:

Chateau Oil and Gas, Inc. hereby requests administrative approval to downhole commingle the Basin Dakota and Flora Vista Gallup formations within the above referenced well. The gas streams are presently designed to produce as a dual completion. Enclosed is the completed Form C-107-A along with the various supporting attachments.

We would like to allocate 76.3% of the gas and 72.1% of the oil to the Dakota formation; 23.7% of the gas and 27.9% of the oil to the Gallup formation, based on the cumulative production history. From October 1985 to May 1997 the Dakota has produced 321,871 MCF of gas and 2,183 barrels of oil. The Gallup has produced 99,726 MCF of gas and 843 barrels of oil.

The ownership, working interest, royalty and overriding royalty are the same for both zones but the percentages of ownership are different. All owners have been notified by certified letter of the proposed commingling and have been provided a copy of the Form C-107-A.

The tubing strings for both zones will be pulled. The intent will be to pull only the seal assembly out of the packer. The 1 1/2" tubing string for the Dakota will be tested and run into the well, stringing it through the packer. A plunger lift will be installed in order to move the associated liquids so that the well will continue to flow.

In addition, copies of the water analysis information are provided on the Con Hale 2-E which is from water samples on the same producing zones. This information has previously been used in determining fluid compatibility on prior commingling applications which have been approved by the Division.

If you have any questions, please contact either me or Dana Dutcher at 214-891-3350.

Sincerely,

John V. Peters  
Vice President - Operations

cc: N.M. Oil Conservation Division, Aztec  
BLM, Farmington

## DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

## DISTRICT II

811 South First St., Artesia, NM 88210-2835

## DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1893

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

2040 S. Pacheco  
Santa Fe, New Mexico 87505-6429Form C-107-A  
New 3-12-96

APPROVAL PROCESS:

XX Administrative \_\_\_ Hearing

EXISTING WELLBORE

XX YES \_\_\_ NO

## APPLICATION FOR DOWNHOLE COMMINGLING

Operator Chateau Oil and Gas, Inc Address 5950 Berkshire Lane, Suite 275, Dallas, tx 75225Lease Kaufman Well No. 1E Unit Ltr. - Sec - Twp - Rge O 33, T31N, R13W County San JuanOGRID NO. 159819 Property Code 010260 API NO. 30-045-25972 Spacing Unit Lease Types: (check 1 or more)  
Federal X State \_\_\_ Land/In Fee \_\_\_

| The following facts are submitted in support of downhole commingling:                                                                                                                                | Upper Zone                                                             | Intermediate Zone   | Lower Zone                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------|---------------------------------------------------|
| 1. Pool Name and Pool Code                                                                                                                                                                           | Flora Vista Gallup<br>76640                                            | -                   | Basin Dakota<br>71599                             |
| 2. Top and Bottom of Pay Section (Perforations)                                                                                                                                                      | 5356' - 5628'                                                          | -                   | 6231' - 6339'                                     |
| 3. Type of production (Oil or Gas)                                                                                                                                                                   | Gas                                                                    | -                   | Gas                                               |
| 4. Method of Production (Flowing or Artificial Lift)                                                                                                                                                 | Flowing                                                                | -                   | Flowing                                           |
| 5. Bottomhole Pressure<br>Oil Zones - Artificial Lift: Estimated Current<br>Gas & Oil - Flowing: Measured Current<br>All Gas Zones: Estimated Or Measured Original                                   | a. (Current) 376 psig<br>7-11-97<br>b. (Original) 1194 psig<br>7-23-84 | a.<br>b.            | a. 188 psig<br>7-11-97<br>b. 1758 psig<br>7-23-84 |
| 6. Oil Gravity (° API) or Gas BTU Content                                                                                                                                                            | 1222 BTU                                                               |                     | 1234 BTU                                          |
| 7. Producing or Shut-In?                                                                                                                                                                             | Shut-In                                                                |                     | Producing                                         |
| Production Marginal? (yes or no)                                                                                                                                                                     | Yes                                                                    |                     | Yes                                               |
| * If Shut-In, give date and oil/gas/water rates of last production<br>Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data | Date: 1-31-95<br>Rates: 1 McFPD                                        | Date: -<br>Rates: - | Date: -<br>Rates: -                               |
| * If Producing, give date and oil/gas/water rates of recent test (within 60 days)                                                                                                                    | Date: -<br>Rates: -                                                    | Date: -<br>Rates: - | Date: May 97<br>Rates: 77McFpd                    |
| 8. Fixed Percentage Allocation Formula - % for each zone                                                                                                                                             | Oil: 27.9 % Gas: 23.7 %                                                | Oil: - % Gas: - %   | Oil: 72.1% Gas: 76.3%                             |

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? \_\_\_ Yes X No  
If not, have all working, overriding, and royalty interests been notified by certified mail? XX Yes \_\_\_ No  
Have all offset operators been given written notice of the proposed downhole commingling? XX Yes \_\_\_ No11. Will cross-flow occur? \_\_\_ Yes X No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. \_\_\_ Yes \_\_\_ No (If No, attach explanation)12. Are all produced fluids from all commingled zones compatible with each other? X Yes \_\_\_ No13. Will the value of production be decreased by commingling? \_\_\_ Yes X No (If Yes, attach explanation)14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. X Yes \_\_\_ No

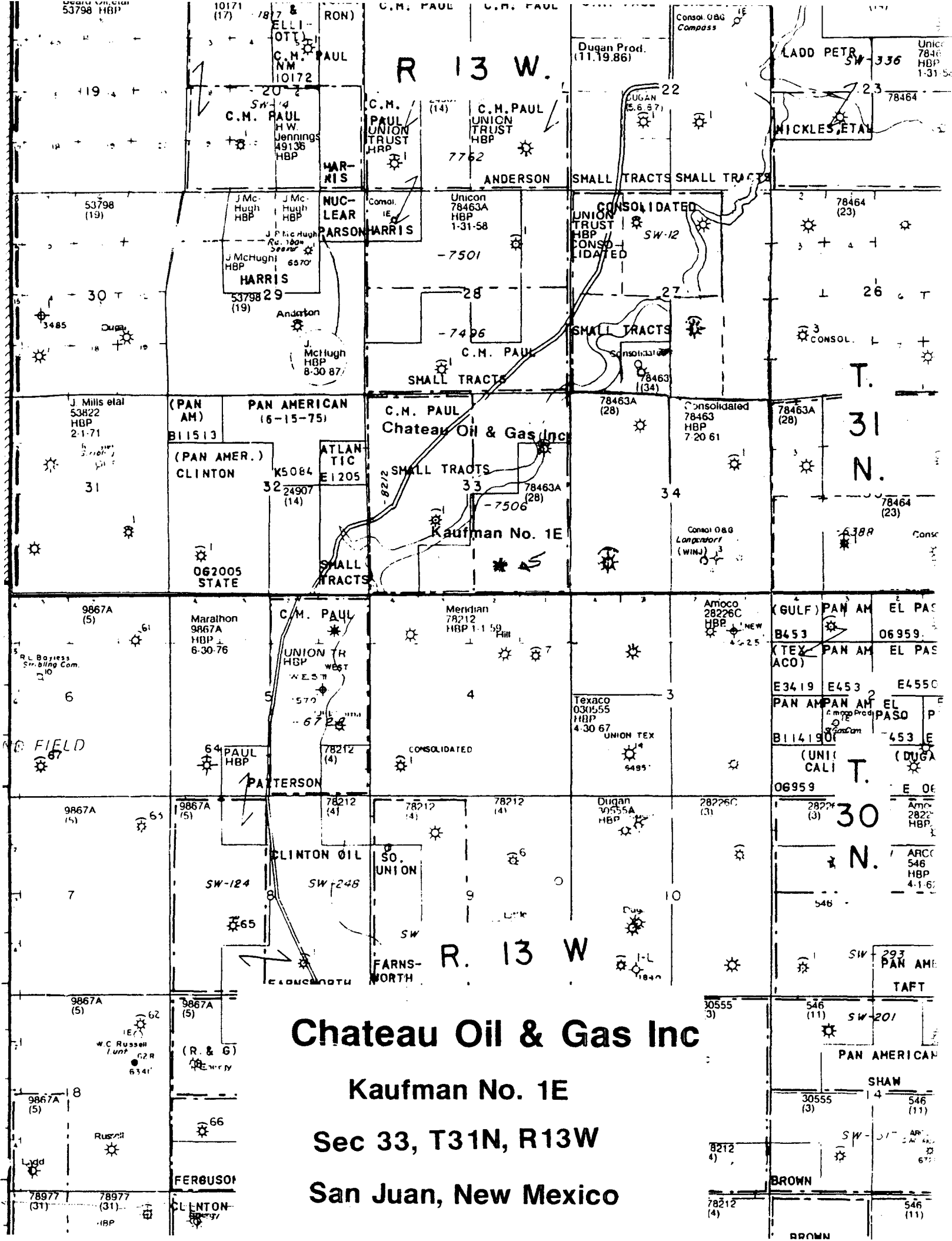
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S) \_\_\_\_\_

## 16. ATTACHMENTS:

- \* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- \* Production curve for each zone for at least one year. (If not available, attach explanation.)
- \* For zones with no production history, estimated production rates and supporting data.
- \* Data to support allocation method or formula.
- \* Notification list of all offset operators.
- \* Notification list of working, overriding, and royalty interests for uncommon interest cases.
- \* Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE John V. Peters TITLE Vice President DATE 7/17/97TYPE OR PRINT NAME John V. Peters TELEPHONE NO. ( 214 ) 891-3350



**Chateau Oil & Gas Inc**

**Kaufman No. 1E**

**Sec 33, T31N, R13W**

**San Juan, New Mexico**

All distances must be from the outer boundaries of the section.

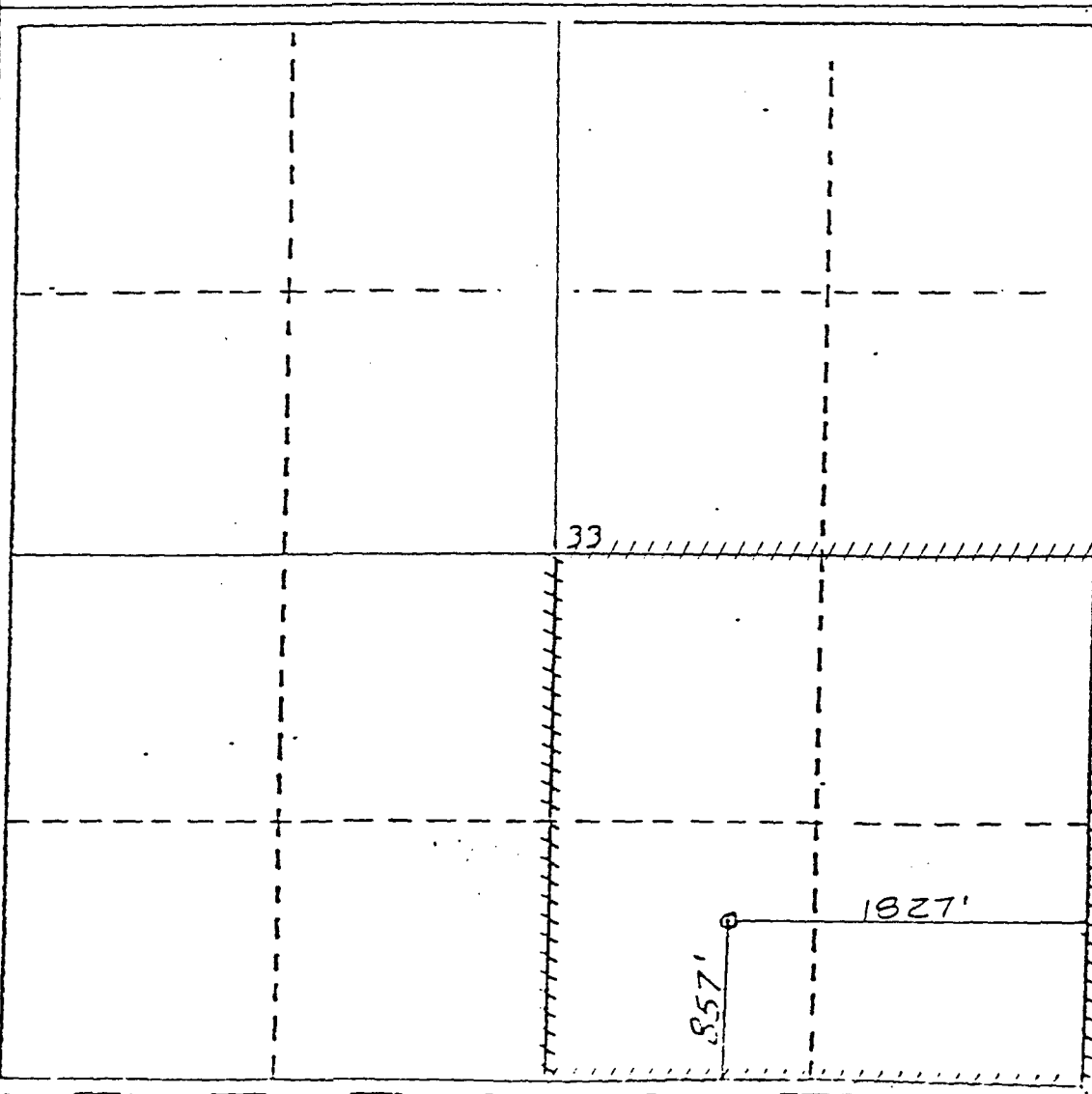
|                                  |                               |                            |                      |                              |                |
|----------------------------------|-------------------------------|----------------------------|----------------------|------------------------------|----------------|
| CONSOLIDATED OIL & GAS, INC.     |                               |                            | Lease<br>KAUFMAN COM |                              | Well No.<br>1E |
| Unit Letter<br>0                 | Section<br>33                 | Township<br>31 NORTH       | Range<br>13 WEST     | County<br>SAN JUAN           |                |
| Actual Easting Location of Well: |                               |                            |                      |                              |                |
| 857 feet from the                |                               | SOUTH line and             |                      | 1827 feet from the EAST line |                |
| Ground Level Elev.<br>5640       | Producing Formation<br>Gallup | Pool<br>Flora Vista Gallup |                      | Dedicated Acreage:<br>160    |                |

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation communitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Director.



# CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Barney Jones*  
Name

Barney Jones

Position

Drilling Foreman

Company

Consolidated Oil & Gas.

Date

April 20, 1984

I hereby certify that the well shown on this plat was planned and located in accordance with the rules and regulations of the State of New Mexico, and that the same is true and correct to the best of my knowledge and belief.

*Michael Daly*  
Date Surveyed

April 23, 1984

Registered Professional Engineer

and/or Land Surveyor

Michael Daly

Certificate No.

5000

All areas must be from the outer boundaries of the lease.

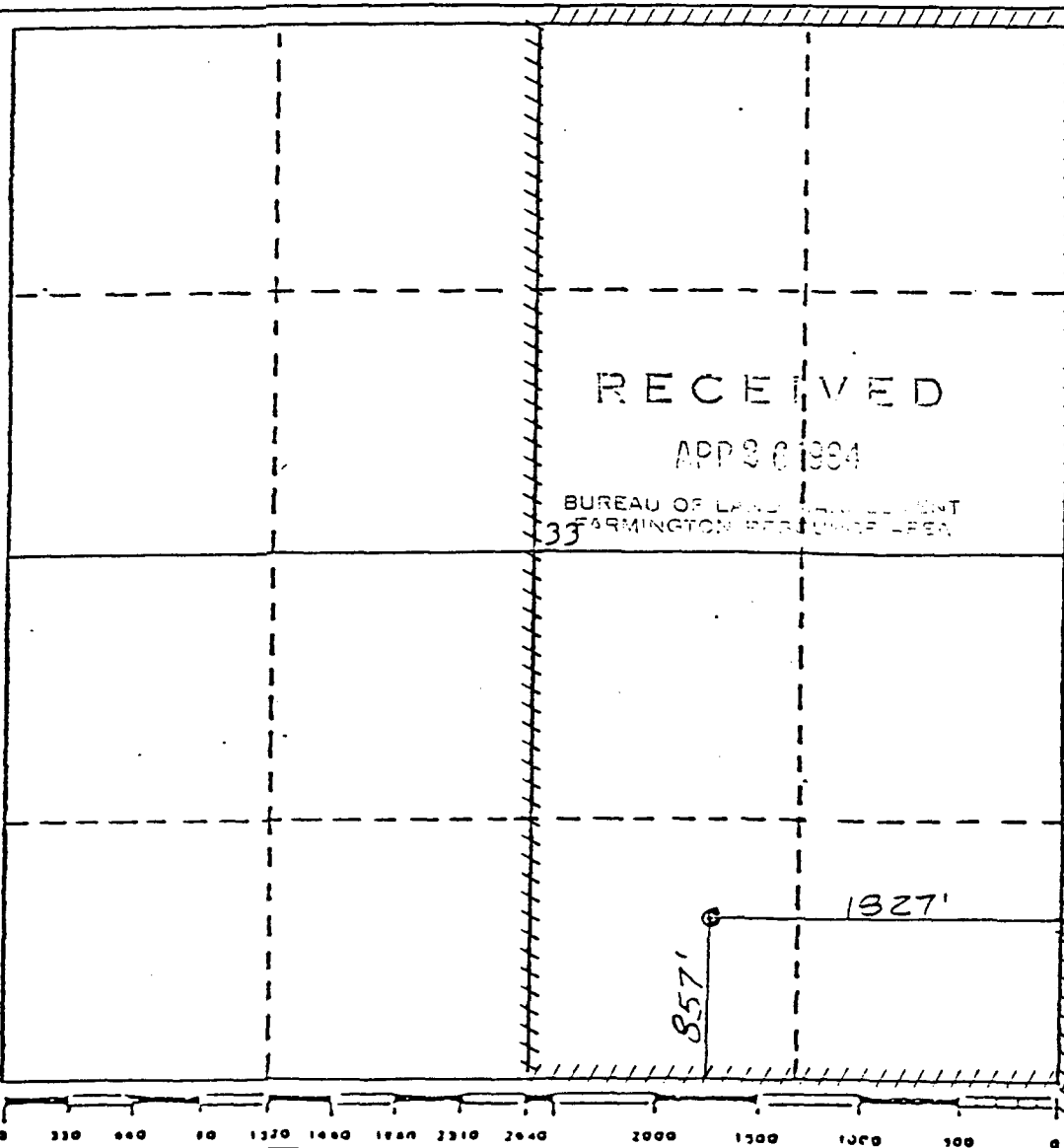
|                                                     |                                      |                                            |                                        |                           |                       |
|-----------------------------------------------------|--------------------------------------|--------------------------------------------|----------------------------------------|---------------------------|-----------------------|
| Operator<br><b>CONSOLIDATED OIL &amp; GAS, INC.</b> |                                      |                                            | Lease<br><b>KAUFMAN 30M</b>            |                           | Well No.<br><b>1E</b> |
| Unit Letter<br><b>0</b>                             | Section<br><b>33</b>                 | Township<br><b>31 NORTH</b>                | Range<br><b>13 WEST</b>                | County<br><b>SAN JUAN</b> |                       |
| Actual Footage Location of Well:                    |                                      |                                            |                                        |                           |                       |
| <b>857</b> feet from the <b>SOUTH</b> line and      |                                      | <b>1827</b> feet from the <b>EAST</b> line |                                        |                           |                       |
| Ground Level Elev.<br><b>5640</b>                   | Producing Formation<br><b>Dakota</b> | Pool<br><b>Basin Dakota</b>                | Dedicated Acreage:<br><b>320</b> Acres |                           |                       |

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation communitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Barney Jones*  
Name

Barney Jones

Position

Drilling Foreman

Company

Consolidated Oil & Gas, Inc.

Date

April 20, 1984

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same are true and correct to the best of my knowledge and belief.

*Michael Daly*  
Date Surveyed  
April 23, 1984

Registered Professional Engineer  
and/or Land Surveyor

Michael Daly

Certificate No.  
5992

**Kaufman # 1E**  
**Fixed Percentage Allocation Formula**

Cumulative Production as of May 1997

|                                | <u>Oil (Barrels)</u> | <u>%</u> | <u>Gas (MCF)</u> | <u>%</u> |
|--------------------------------|----------------------|----------|------------------|----------|
| <b><u>Dakota Formation</u></b> | 2,183                | 72.1%    | 321,871          | 76.3%    |
| <b><u>Gallup Formation</u></b> | 843                  | 27.9%    | 99,726           | 23.7%    |
| <b><u>TOTAL</u></b>            | 3,026                | 100.0%   | 421,597          | 100.0%   |

# Kaufman 1E Gallup

Kaufman 1-E (GP) (PH) 30

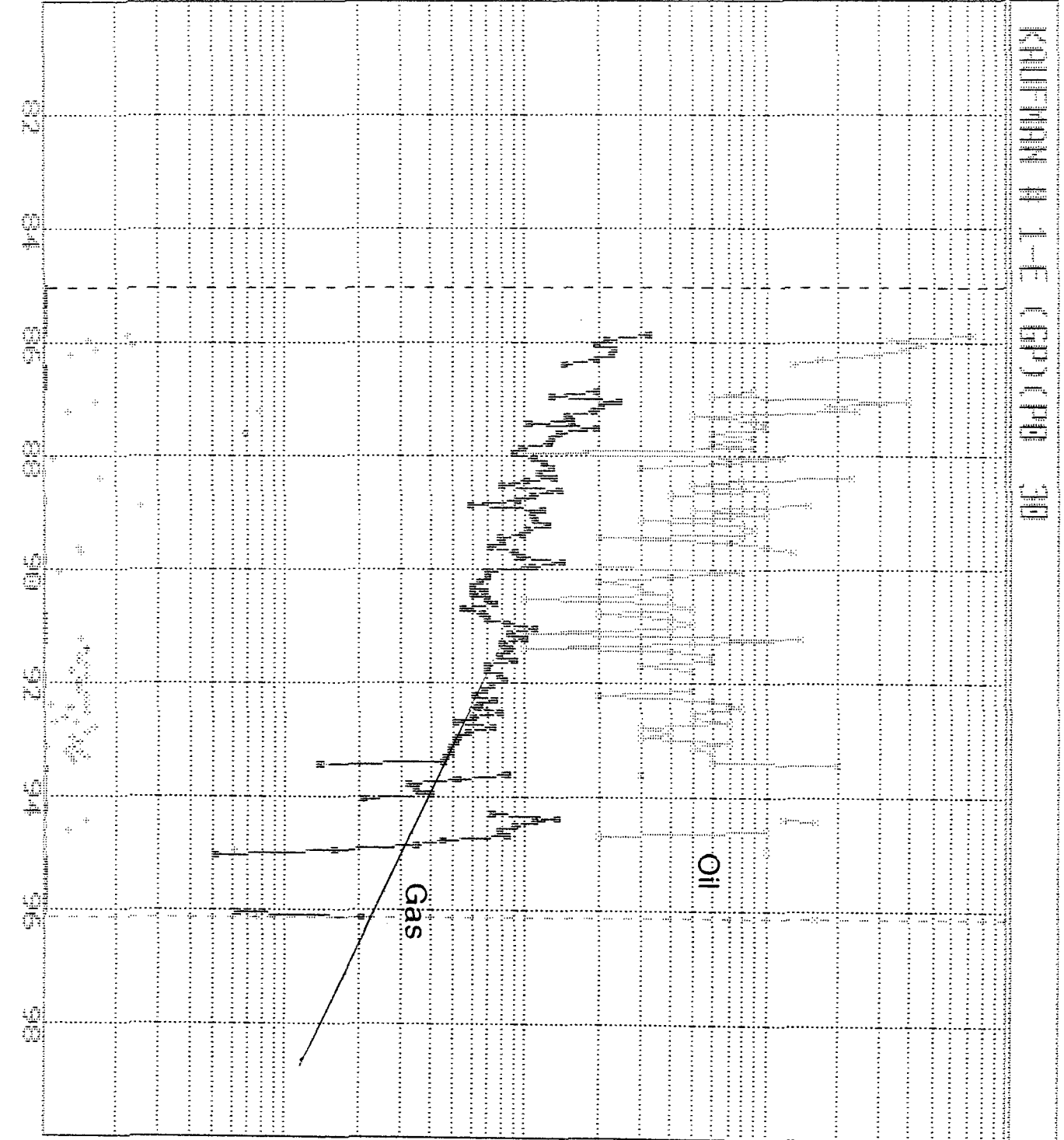
Prop 1217

• WATER  
• OIL/GAS  
• GAS  
• OIL

○ OIL Bbl/m  
● GAS Mcf/m  
○ OIL/GAS  
○ WATER Bbl/m



10 100 1000 10000  
10 100 1000 10000  
10 100 1000 10000  
0.01 0.1 1 10



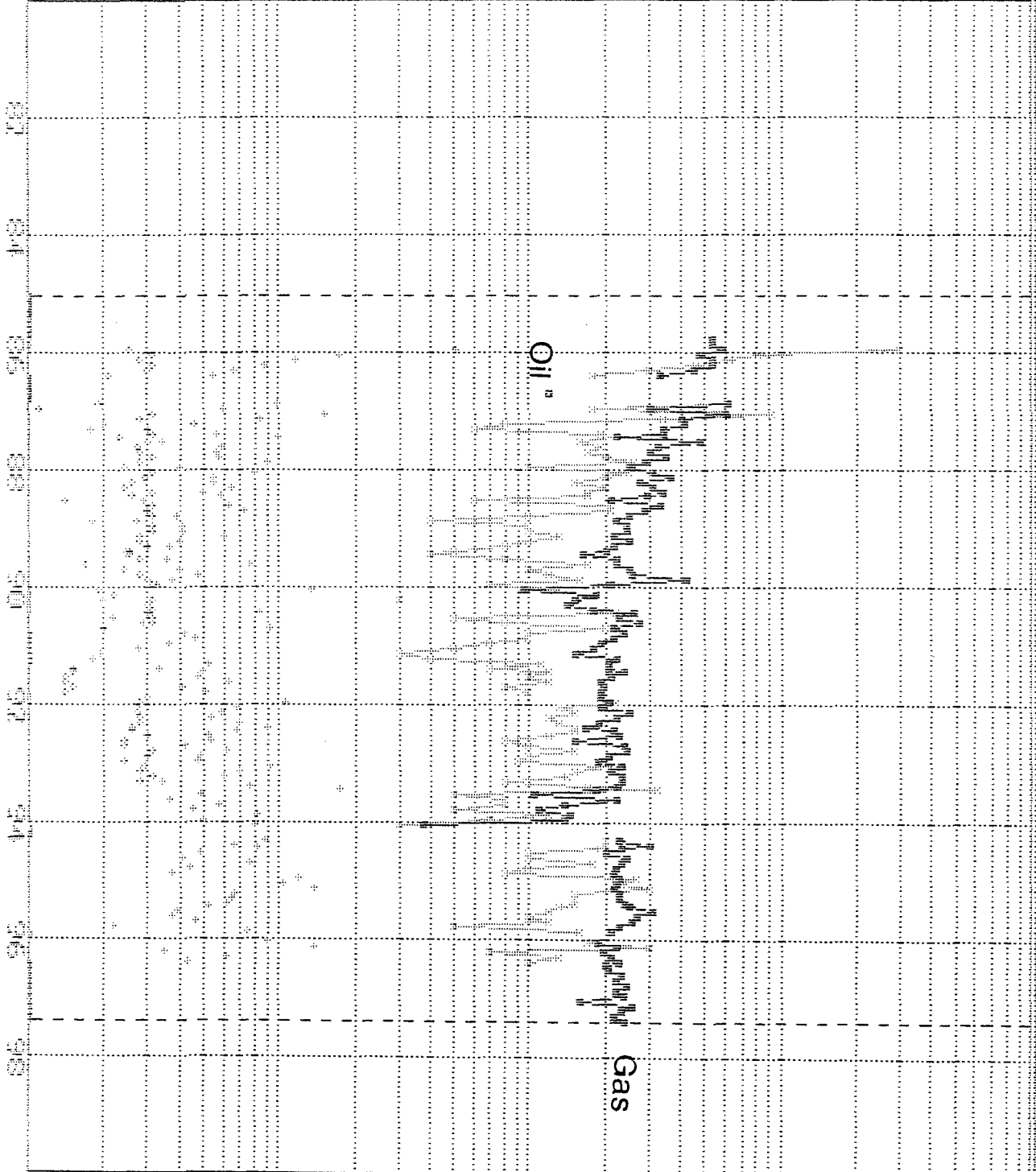
Major = GAS

# Kaufman #1E Dakota

Kaufman #1-E (OK) B

• WATER  
• OIL/GAS  
• GAS  
• OIL

10000 1000 100 10  
1000 100 10 1  
10 1 0.1



Prop 426

- OIL Mbl/m
- GAS Mcf/m
- OIL/GAS
- WATER Bbl/m

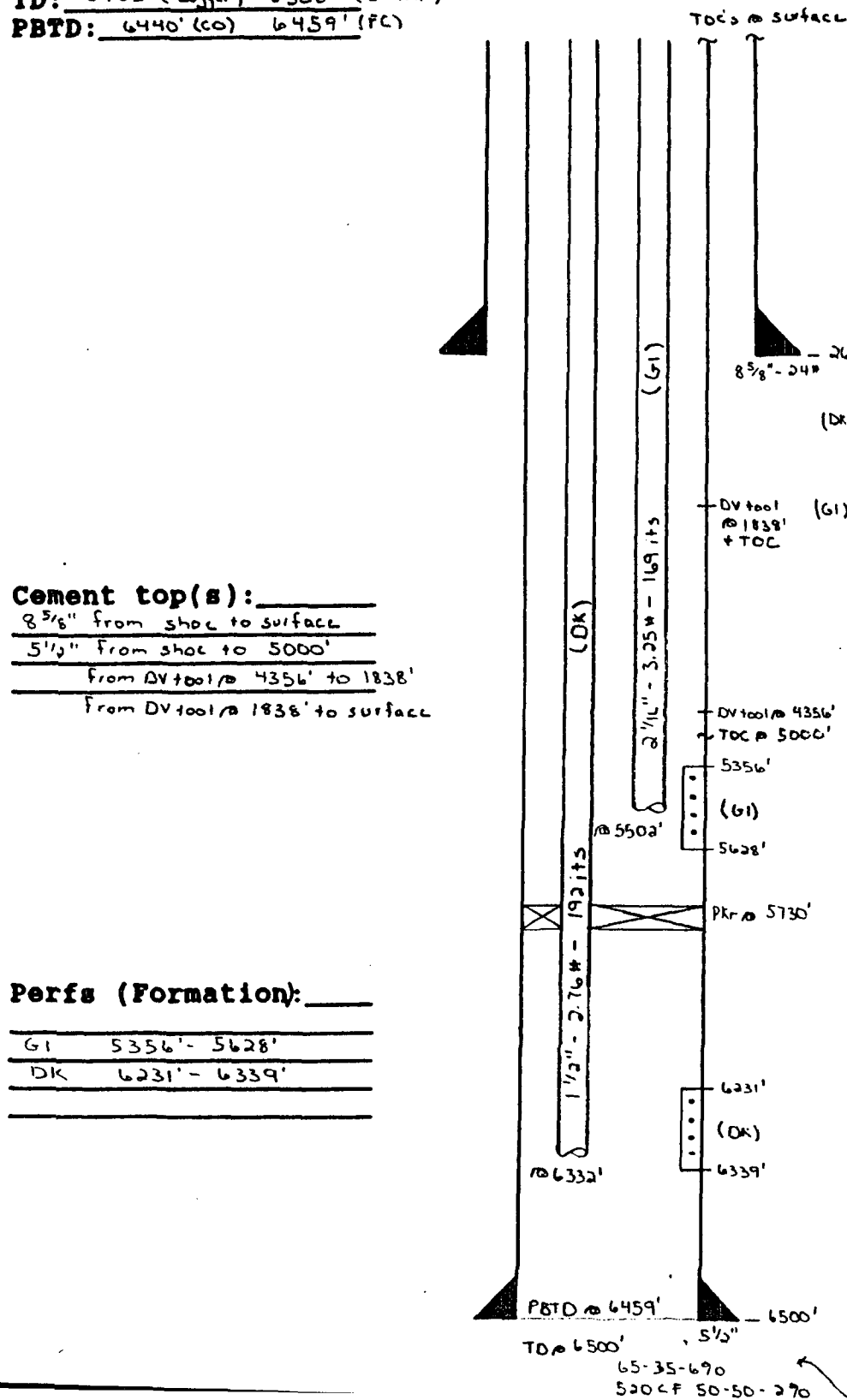
Rate Time  
Sent Log

Major = DHS

## WELLBORE DIAGRAM

WELL NAME: Kaufman No. 1E  
 LOCATION: 857' FSL & 1827' FEL  
 COUNTY, STATE: San Juan, NM  
 GL Elevation: 5640'  
 KB Elevation: 5653'  
 TD: 6485' (Logger) 6500' (Driller)  
 PBTD: 6440' (CO) 6459' (FC)

BY: MCO  
 DATE: 8-6-91



Surface Csg: 12 1/4" bit  
 8 5/8" - 24# cmt'd @ 263'  
 w/ 250 SX C1 "B" w/ 270 CaCl2  
 1/4# celloflake/SK

Tubing:  
 (DK) 1 1/2" IS 3.76# J-55 192 its landed  
 thru pkr @ 6332' (KB) w/ 1.375"  
 ID SN 1 jt off btm  
 (GI) 2 1/16" - IS 3.25# J-55 169 its landed  
 @ 5502' (KB) w/ 1.50" SN 1 jt off btm

Packer:  
 5 1/2" Baker Model retriev-a-D  
 set top @ 5730'

Production Csg: 7 7/8" bit  
 5 1/2" - 10 its 17# N-80 (375.02')  
 153 its 15.5# J-55 (6118.18')  
 Landed @ 6500'  
 1st stage cmt thru shoe w/ 446 CF 50-50-270  
 2nd stage cmt thru DV tool @ 4356' w/ 580 CF  
 65-35-690, 533 CF 50-50-270  
 3rd stage cmt thru DV tool @ 1838' w/ 340 CF

# TEFTELLER INC

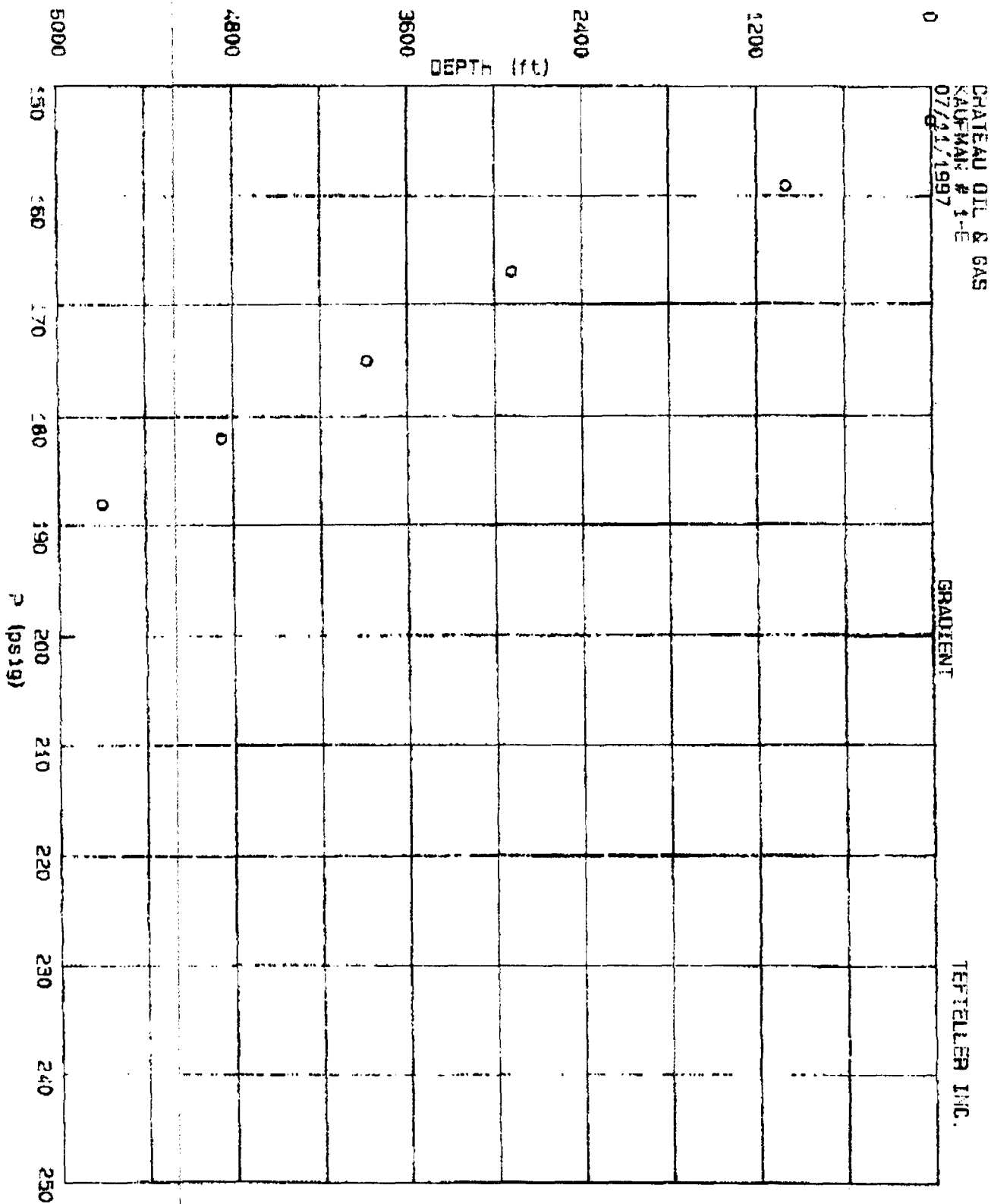
## Pressure Gradient Report

COMP : CHATEAU OIL & GAS WELL : KAUFMAN # 1-E T : 0.0  
 FIELD : RES : DAKOTA DATUM : 5700.0  
 DATE : 07/11/1997 STATUS : S.I. HRS : 0.0  
 TBG : 1-1/2 DPTH : END : 6287 PKR : S N :  
 CSG : DPTH : PERFS : GRAD : 0.007000 T D :

| Depth<br>(ft) | Pressure<br>(psig) | Delta P<br>(psi) | Gradient<br>(psi/ft) |
|---------------|--------------------|------------------|----------------------|
| 0             | 153.0              |                  |                      |
| 1000          | 159.0              | 6.0              | 0.0060               |
| 2000          | 167.0              | 8.0              | 0.0043               |
| 3000          | 175.0              | 8.0              | 0.0080               |
| 4000          | 182.0              | 7.0              | 0.0070               |
| 5700          | 188.0              | 6.0              | 0.0073               |
| 5700          | 188.0              | 0.0              |                      |

REMARKS : CASING PRESSURE PAKER

TUBING PRESSURE: 153



# TEFTELLER INC

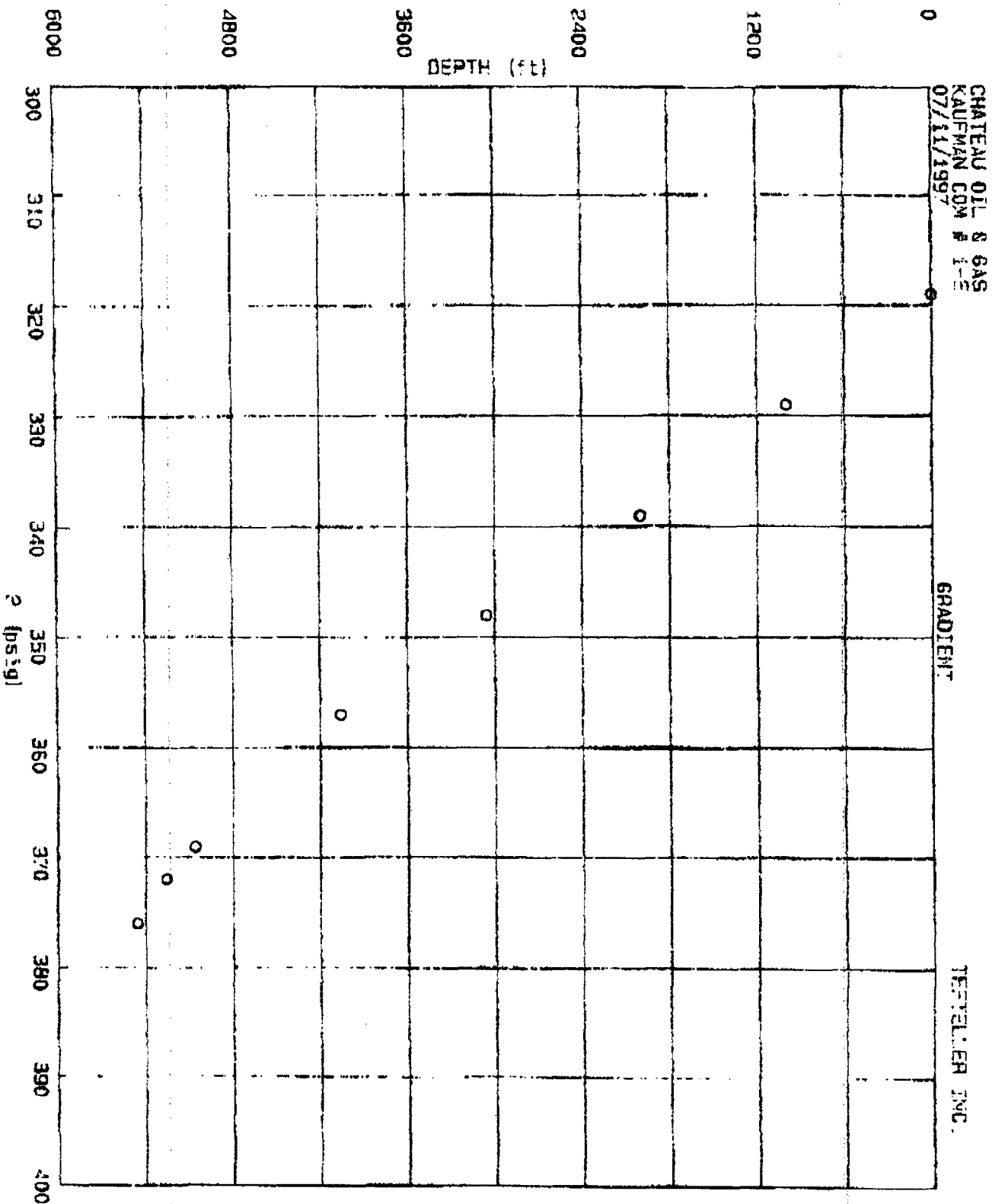
## Pressure Gradient Report

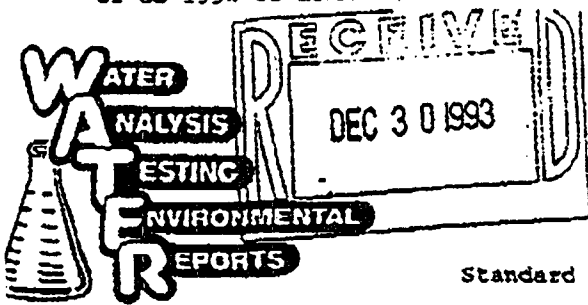
COMP : CHATEAU OIL & GAS WELL : KAUFMAN COM # 1-E T : 0.0  
 FIELD : RES : GALLUP DATUM : 5460.0  
 DATE : 07/11/1997 STATUS : S.I. HRS : 0.0  
 TBG : 2-1/16 DPTH : END : 5463 PKR : S N :  
 CSG : DPTH : PERFS : GRAD : 0.015000 T D :

| Depth<br>(ft) | Pressure<br>(psig) | Delta P<br>(psi) | Gradient<br>(psi/ft) |
|---------------|--------------------|------------------|----------------------|
| 0             | 319.0              |                  |                      |
| 1000          | 329.0              | 10.0             | 0.0100               |
| 2000          | 339.0              | 10.0             | 0.0100               |
| 3060          | 348.0              | 9.0              | 0.0085               |
| 4060          | 357.0              | 9.0              | 0.0090               |
| 5060          | 369.0              | 12.0             | 0.0120               |
| 5260          | 372.0              | 3.0              | 0.0150               |
| 5460          | 376.0              | 4.0              | 0.0200               |
| 5460          | 376.0              | 0.0              |                      |

REMARKS : CASING PRESSURE 350

TUBING PRESSURE 319





1115 Farmington Avenue - Farmington, NM 87401  
(505) 325-1085

Lab Number:

W93-542

## Standard A.P.I. Water Analysis Report

Company: SNYDER OIL CORPORATION

Date Collected: 12/23/93

Well Name: CON HALE 2-E; DAKOTA

Date Received: 12/27/93

Formation: Basin Dakota

Date Analyzed: 12/27/93

Location: M SEC.15-T26N-R8W

County: San Juan State: New Mexico

Collected By: SOCO

Analyst: Sheila Feltman *Sheila*

Remarks:

## Attention:

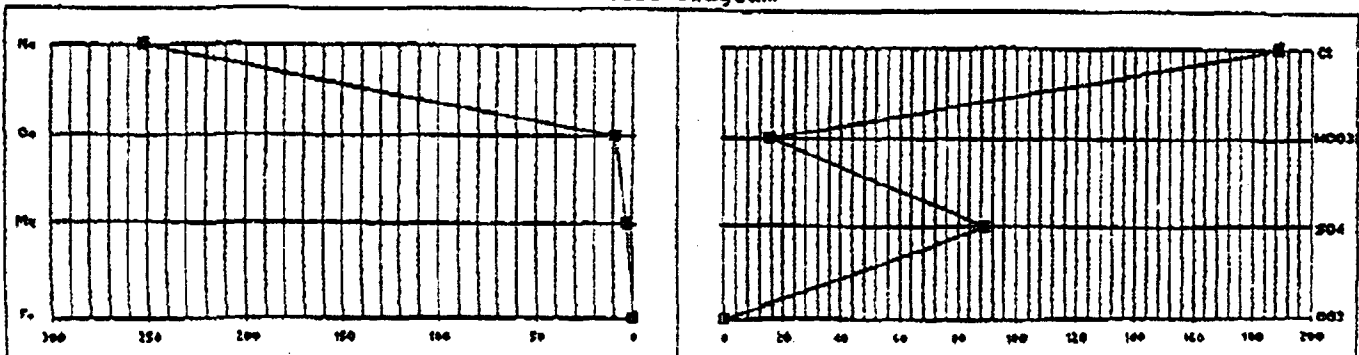
| PARAMETER              | AS FOUN     | COMMENT   | PARAMETER                     | AS FOUN     | COMMENT |
|------------------------|-------------|-----------|-------------------------------|-------------|---------|
| Sodium, Na             | 5,800 mg/l  |           | Chloride, Cl                  | 6,700 mg/l  |         |
| Potassium, K           | 82 mg/l     |           | Sulfate, SO <sub>4</sub>      | 4,300 mg/l  |         |
| Calcium, Ca            | 180 mg/l    |           | Hydroxide, OH                 | 0 mg/l      |         |
| Magnesium, Mg          | 36 mg/l     |           | Carbonate, CO <sub>3</sub>    | 0 mg/l      |         |
| Iron, Fe (Total)       | 0 mg/l      | NOT RUN   | Bicarbonate, HCO <sub>3</sub> | 950 mg/l    |         |
| Sulfide                | 0 mg/l      | <0.5 mg/L | Resistivity                   | 0.382 ohm-m |         |
| pH                     | 7.2 units   |           | (@ 25 Degrees C)              |             |         |
| Total Dissolved Solids | 18,600 mg/l |           | Conductivity                  | 26,200 us   |         |
|                        |             |           | Specific Gravity              | 1.017       |         |
|                        |             |           | (@ 60 Degrees F)              |             |         |

Remarks: Sample received was approximately 50% water and 50% organic - the latter had two layers of liquid - one black and one green, and a large amount of solids; water only used in analyses

Anion/Cation:

110%

## Stiff Diagram





1115 FARMINGTON AVENUE - FARMINGTON, NM 87401

(505) 325-6622

ANALYSIS NO. SNY30003

## WELL/LEASE INFORMATION

COMPANY: SNYDER OIL CORPORATION

WELL NAME: CON. HALE 2-E

PRESSURE: 125 PSIG

LOCATION: (M) SEC. 15-T26N-R8W

SAMPLE TEMP.: DEG.F

LSE/CNTY: SAN JUAN, NM

WELL FLOWING:

FORMATION: DAKOTA

DATE SAMPLED: 12/16/93

METER NO.:

SAMPLED BY: A.P.

REMARKS:

DEC 21 1993

## ANALYSIS

| COMPONENT                      | MOLES   | GPM    |
|--------------------------------|---------|--------|
| NITROGEN                       | 0.707   | 0.0000 |
| CO2                            | 0.806   | 0.0000 |
| METHANE                        | 78.336  | 0.0000 |
| ETHANE                         | 11.590  | 3.1003 |
| PROPANE                        | 5.680   | 1.5654 |
| I-BUTANE                       | 0.773   | 0.2528 |
| N-BUTANE                       | 1.453   | 0.4581 |
| I-PENTANE                      | 0.297   | 0.1087 |
| N-PENTANE                      | 0.227   | 0.0822 |
| HEXANE+                        | 0.131   | 0.0571 |
| TOTAL                          | 100.000 | 5.6247 |
| COMPRESSIBILITY FACTOR         | (1/2)   | 1.0035 |
| BTU/CU.FT. (DRY) CORRECTED FOR | (1/2)   | 1246.6 |
| BTU/CU.FT. (WET) CORRECTED FOR | (1/2)   | 1224.9 |
| REAL SPECIFIC GRAVITY          |         | 0.7240 |

ANALYSIS RUN AT 14.73 PSIA &amp; 60 DEGREES F

CYLINDER PRESSURE: 330 PSI

DATE RUN: 12/17/93

ANALYSIS RUN BY: SHEILA FELTMAN

1115 Farmington Avenue - Farmington, NM 87401

(505) 325-1085



Lab Number:

W93-524

## Standard A.P.I. Water Analysis Report

Company: SNYDER OIL CORPORATION

Date Collected: 12/16/93

Well Name: CON HALE 2-E; GALLUP

Date Received: 12/16/93

Formation: Gallup

Date Analyzed: 12/17; 12/20/93

Location: M SEC.15-T26N-R8W

County: San Juan State: New Mexico

Collected By: AP

Analyst: Sheila Feltman *Shila*

Remarks:

## Attention:

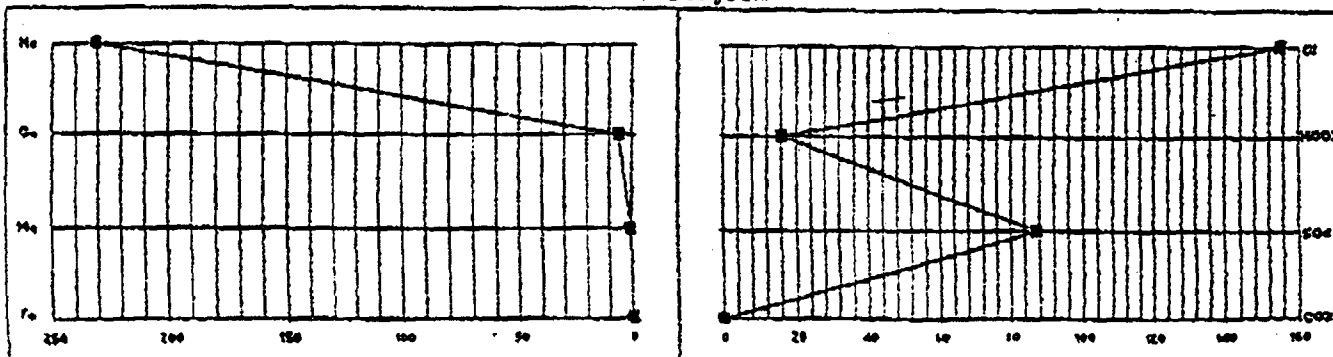
| PARAMETER              | AS RUN      | COMMENT   | PARAMETER                     | AS RUN      | COMMENT |
|------------------------|-------------|-----------|-------------------------------|-------------|---------|
| Sodium, Na             | 5,300 mg/l  |           | Chloride, Cl                  | 5,500 mg/l  |         |
| Potassium, K           | 55 mg/l     |           | Sulfate, SO <sub>4</sub>      | 4,200 mg/l  |         |
| Calcium, Ca            | 120 mg/l    |           | Hydroxide, OH                 | 0 mg/l      |         |
| Magnesium, Mg          | 14 mg/l     |           | Carbonate, CO <sub>3</sub>    | 0 mg/l      |         |
| Iron, Fe (Total)       | 0 mg/l      | NOT RUN   | Bicarbonate, HCO <sub>3</sub> | 980 mg/l    |         |
| Sulfide                | 0 mg/l      | <0.1 mg/L | Resistivity                   | 0.450 ohm-m |         |
| pH                     | 8.0 units   |           | (825 Degrees C)               |             |         |
| Total Dissolved Solids | 14,520 mg/l |           | Conductivity                  | 22,200 uS   |         |
|                        |             |           | Specific Gravity              | 1.015       |         |
|                        |             |           | (@ 60 Degrees F)              |             |         |

Remarks: A small amount of condensate was present in this sample.

Anion/Cation:

1088

Stiff Diagram



Scale: meq/L



1115 FARMINGTON AVENUE - FARMINGTON, NM 87401

(505) 325-6622

DEC 21 1993

ANALYSIS NO. SNY30004

## WELL/LEASE INFORMATION

COMPANY: SNYDER OIL CORPORATION

WELL NAME: CON. HALE 2-E

PRESSURE: 125 PSIG

LOCATION: (M) SEC. 15-T26N-R8W

SAMPLE TEMP.: DEG.F

LSE/CNTY: SAN JUAN, NM

WELL FLOWING:

FORMATION: GALLUP

DATE SAMPLED: 12/16/93

METER NO.:

SAMPLED BY: A.P.

REMARKS:

## ANALYSIS

| COMPONENT                            | MOLES   | GPM    |
|--------------------------------------|---------|--------|
| NITROGEN                             | 0.682   | 0.0000 |
| CO2                                  | 0.772   | 0.0000 |
| METHANE                              | 78.902  | 0.0000 |
| ETHANE                               | 11.178  | 2.9901 |
| PROPANE                              | 5.136   | 1.4155 |
| I-BUTANE                             | 0.590   | 0.1930 |
| N-BUTANE                             | 1.431   | 0.4512 |
| I-PENTANE                            | 0.376   | 0.1376 |
| N-PENTANE                            | 0.363   | 0.1315 |
| HEXANE+                              | 0.570   | 0.2486 |
| TOTAL                                | 100.000 | 5.5675 |
| COMPRESSIBILITY FACTOR (1/Z)         |         | 1.0036 |
| BTU/CU.FT. (DRY) CORRECTED FOR (1/Z) |         | 1256.0 |
| BTU/CU.FT. (WET) CORRECTED FOR (1/Z) |         | 1234.2 |
| REAL SPECIFIC GRAVITY                |         | 0.7292 |

ANALYSIS RUN AT 14.73 PSIA &amp; 60 DEGREES F

CYLINDER PRESSURE: 111 PSI

DATE RUN: 12/17/93

01-03-1994 11:24AM

FROM SNYDER FARMINGTON NM

NMOCD Examiner Hearing

February 17, 1994

Application of Snyder Oil Corporation

Case NO. 10908

Exhibit NO. 4



## SNYDER OIL CORPORATION

## WELL ANALYSIS COMPARISON

LEASE: CON. HALE 2-E

DECEMBER 20, 1993

| DATE:     | 12/16/93 | 12/16/93 |
|-----------|----------|----------|
| NO.:      | 30003    | 30004    |
|           | DAKOTA   | CHALLUP  |
|           | MOLE %   | MOLE %   |
| NITROGEN  | 0.707    | 0.682    |
| CO2       | 0.806    | 0.772    |
| METHANE   | 78.336   | 78.902   |
| ETHANE    | 11.590   | 11.178   |
| PROPANE   | 5.680    | 5.136    |
| I-BUTANE  | 0.773    | 0.590    |
| N-BUTANE  | 1.453    | 1.431    |
| I-PENTANE | 0.297    | 0.376    |
| N-PENTANE | 0.227    | 0.363    |
| HEXANE+   | 0.131    | 0.570    |
| BTU'S     | 1246.6   | 1256.0   |
| GPM       | 5.6247   | 5.5675   |
| SPEC GRAV | 0.7240   | 0.7292   |

U N I C H E M I N T E R N A T I O N A L

1215 Basin Road

P.O. Box 421

FARMINGTON, N.M. 87401

COMPANY: COLUMBUS ENERGY

DATE: 4-9-86

FIELD, LEASE AND WELL: CANDADO 1E MESA VERDE

SAMPLING POINT: WELLHEAD

DATE SAMPLED: 3-27-86

SPECIFIC GRAVITY: 1.009

TOTAL DISSOLVED SOLIDS: 14,335

PH = 7.04

|           |             | ME/L  | MG/L   |
|-----------|-------------|-------|--------|
| CATIONS   |             |       |        |
| CALCIUM   | (CA)+2      | 5.6   | 112.0  |
| MAGNESIUM | (MG)+2      | 4.4   | 53.4   |
| SODIUM    | (NA), CALC. | 221.0 | 5101.0 |

|             |         |       |        |
|-------------|---------|-------|--------|
|             |         | ME/L  | MG/L   |
| ANIONS      |         |       |        |
| BICARBONATE | (C)3)-1 | 13.4  | 817.0  |
| CARBONATE   | (CO3)-2 |       |        |
| HYDROXIDE   | (OH)-1  |       |        |
| SULFATE     | (SO4)-2 | 38.5  | 1850.0 |
| CHLORIDES   | (CL)-1  | 180.0 | 6400.0 |

|                           |        |           |              |
|---------------------------|--------|-----------|--------------|
| DISSOLVED GASES           |        |           |              |
| CARBON DIOXIDE            | (CO2)  |           |              |
| HYDROGEN SULFIDE          | (H2S)  |           |              |
| OXYGEN                    | (O2)   |           |              |
| IRON                      | (FE)   |           | 61.0         |
| BARIUM                    | (BA)+2 |           | 0.2          |
| MANGANESE                 | (MN)   |           |              |
| IONIC STRENGTH = 0.26     |        |           |              |
| SCALING INDEX             |        | TEMP      |              |
|                           |        | 86°F 30°C | 120°F 48.8°C |
| CARBONATE INDEX           |        | -0.25     | 0.142        |
| CALCIUM CARBONATE SCALING |        | UNLIKELY  | LIKELY       |
| SULFATE INDEX             |        | -27.0     | -28.0        |
| CALCIUM SULFATE SCALING   |        | UNLIKELY  | UNLIKELY     |

U N I C H E M   I N T E R N A T I O N A L

1215 Basin Road

P.O. Box 421

FARMINGTON, N.M. 87401

COMPANY: COLUMBUS ENERGY

DATE: 4-9-86

FIELD, LEASE AND WELL: CANDADO 1E DAKOTA

SAMPLING POINT: WELLHEAD

DATE SAMPLED: 3-27-86

SPECIFIC GRAVITY: 1.009

TOTAL DISSOLVED SOLIDS: 15,092

PH = 7.95

|           |             | ME/L  | MG/L   |
|-----------|-------------|-------|--------|
| CATIONS   |             |       |        |
| CALCIUM   | (CA)+2      | 1.6   | 32.0   |
| MAGNESIUM | (MG)+2      | 2.4   | 29.1   |
| SODIUM    | (NA), CALC. | 245.0 | 5632.0 |

|             |         |       |        |
|-------------|---------|-------|--------|
| ANIONS      |         |       |        |
| BICARBONATE | (C3)-1  | 21.0  | 1281.0 |
| CARBONATE   | (CO3)-2 |       |        |
| HYDROXIDE   | (OH)-1  |       |        |
| SULFATE     | (SO4)-2 | 0     | 0      |
| CHLORIDES   | (CL)-1  | 228.0 | 8100.0 |

|                        |        |      |      |
|------------------------|--------|------|------|
| DISSOLVED GASES        |        |      |      |
| CARBON DIOXIDE         | (CO2)  |      |      |
| HYDROGEN SULFIDE       | (H2S)  |      |      |
| OXYGEN                 | (O2)   |      |      |
| IRON                   | (FE)   |      | 35.1 |
| BARIUM                 | (BA)+2 | 0.25 | 17.3 |
| MANGANESE              | (MN)   |      |      |
| IONIC STRENGTH = 0.255 |        |      |      |

|                           | SCALING INDEX | TEMP.<br>86°F 30°C | 120°F 48.8°C |
|---------------------------|---------------|--------------------|--------------|
| CARBONATE INDEX           |               | 0.310              | 0.711        |
| CALCIUM CARBONATE SCALING |               | LIKELY             | LIKELY       |
| SULFATE INDEX             |               | -45.0              | -46.0        |
| CALCIUM SULFATE SCALING   |               | UNLIKELY           | UNLIKELY     |

U N I C H E M   I N T E R N A T I O N A L

1215 Basin Road

P.O. Box 421

FARMINGTON, N.M. 87401

COMPANY: COLUMBUS ENERGY

DATE: 4-9-86

FIELD, LEASE AND WELL: 50% CANDADO 1E MESA VERDE/50% CANDADO 1E DAKOTA

SAMPLING POINT: WELLHEAD

DATE SAMPLED: 3-27-86

SPECIFIC GRAVITY: 1.009

TOTAL DISSOLVED SOLIDS: 14,764

PH = 7.495

|           |             | ME/L  | MG/L   |
|-----------|-------------|-------|--------|
| CATIONS   |             |       |        |
| CALCIUM   | (CA)+2      | 3.6   | 72.1   |
| MAGNESIUM | (MG)+2      | 3.4   | 41.4   |
| SODIUM    | (NA), CALC. | 233.0 | 5367.0 |

|             |         |       |        |
|-------------|---------|-------|--------|
| ANIONS      |         |       |        |
| BICARBONATE | (C)3)-1 | 17.2  | 1049.0 |
| CARBONATE   | (CO3)-2 |       |        |
| HYDROXIDE   | (OH)-1  |       |        |
| SULFATE     | (SO4)-2 | 19.2  | 925.0  |
| CHLORIDES   | (CL)-1  | 204.0 | 7300.0 |

DISSOLVED GASES

|                      |        |      |      |
|----------------------|--------|------|------|
| CARBON DIOXIDE       | (CO2)  |      |      |
| HYDROGEN SULFIDE     | (H2S)  |      |      |
| OXYGEN               | (O2)   |      |      |
| IRON                 | (FE)   |      | 48.0 |
| BARIUM               | (BA)+2 | 0.12 | 8.7  |
| MANGANESE            | (MN)   |      |      |
| IONIC STRENGTH 0.258 |        |      |      |

|                           | SCALING INDEX | TEMP.       |                |
|---------------------------|---------------|-------------|----------------|
|                           |               | 86° F 30° C | 120° F 48.8° C |
| CARBONATE INDEX           |               | 0.115       | 0.517          |
| CALCIUM CARBONATE SCALING |               | LIKELY      | LIKELY         |
| SULFATE INDEX             |               | -36.0       | -36.0          |
| CALCIUM SULFATE SCALING   |               | UNLIKELY    | UNLIKELY       |

**Kaufman 1E Offset Operators**

|                                                                                   |                                                                     |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
| P-R-O- Management<br>9400 N. Central Exprwy #1313<br>LB 158<br>Dallas, Tx 75231   | Sec 5-30N-13W                                                       |
| Burlington Resources<br>P.O. Box 840656<br>Dallas, Tx 75284-0656                  | Sec 34-31N-13W<br>Sec 3- 30N-13W                                    |
| Chateau Oil & Gas, Inc<br>5950 Berkshire Lane<br>Suite 275<br>Dallas, Tx 75225    | Sec 28-31N-13W<br>Sec 27-31N-13W<br>Sec 34-31N-13W<br>Sec 4 30N-13W |
| Robert Click<br>Roddy Production<br>8340 Meadow Rd, Suite 230<br>Dallas, Tx 75231 | Sec 4-30N-13W                                                       |
| Fuller Petroleum<br>P.O. Box 11327<br>Midland, tx 79702                           | Sec 28-31N-13W<br>Sec 5-30N-13W<br>Sec 33-31N-13W                   |
| Bruce Anderson<br>1000 Louisiana St.<br>Suite 900<br>Houston, Tx 77002            | Sec 29-31N-13W                                                      |
| Denver American Petroleum<br>1775 Sherman St., Suite 1450<br>Denver, Co. 80203    | Sec 32-31N-13W                                                      |

**KAUFMAN 1E**

**Working Interest Owners - Gallup/Dakota**

Chateau Oil and Gas, Inc.  
5950 Berkshire Lane  
Suite 275  
Dallas, Tx 75225

General Motors NPA  
c/o RPI Institutional Services  
808 Travis, Suite 916  
Houston, Tx 77002

Hugoton Energy Corp.  
Mr Kurt F. Schweigent  
301 N. Main  
Suite 1900  
Wichita, Ks 67202

Calico Investments, Inc  
4429 Central Expressway  
Dallas, Tx 75205

Margaret Allinson Laycock  
1511 West 31st Street  
Austin, Tx 78703

Kelley A. Murrell  
3512 Cornell  
Dallas, Tx 75205

John B. Allinson, Jr  
2013 Douglas Drive  
San Angelo, Tx 76904-5025

Estate of Marie F. Lavery  
13131 Hughes Lane  
Dallas, Tx 75240

P-R-O- Management, Inc  
9400 N. Central Exprwy  
Suite 1313, LB 158  
Dallas, Tx 75231

Arthur Alsberg  
3816 Longridge  
Sherman Oaks, Ca 91423

Sanford Becker  
27 Chester Drive  
Rye, N.Y. 10580

Marjorie A. Bachman  
20 Old Mamaroneck Road  
White Plains, N.Y. 10605

Addie Gutttag  
575 Park Avenue, Apt 1603  
New York, N.Y. 10021

Susan K. Baker  
40 East 88th Street  
New York, N.Y. 10128

John V. Gutttag  
273 Emerson Road  
Lexington, Ma. 02713

Richard S. Becker  
44 Graham Road  
Scarsdale, N.Y. 10583

Thomas Kaufman  
39 Princeton Ave.  
Princeton, N.J. 08540

Ann K. Bower, Trustee  
James R. Bower, Jr Test. Trust  
P.O. Box 25069  
Dallas, Tx 75225

John T., Thomas R., Kerry C.  
and Vivian D. Lavery  
14421 Overview Drive  
Dallas, Tx 75240

Robert A. Leach  
488 Hillbrook Drive  
Ballwin, Mo. 63011

Ell McComb  
McComb Associates  
2321 Chimney Hill Drive  
Arlington, Tx 76012

Segal Oil and Gas, Inc  
c/o Andrew Segal  
6 Peter Cooper Road #11E  
New York, N.Y. 10010

Unclaimed Property Division  
f/a/o Neil F. Toler  
Texas State Treasury  
Austin, Tx 78760

Chateau Energy, Inc.  
5950 Berkshire Lane  
Suite 275  
Dallas, Tx. 75225

Royalty Owners - Gallup/Dakota

Barnett Properties, Inc  
c/o John Barnett  
4564 West Detroit Street  
Chandler, Az 85226

Marcia Fuller French  
P.O. Box 11327  
Midland, Tx 79702

Minerals Management Service  
Royalty Management Program  
P.O. Box 5810  
Denver, Co. 80217-5810

James R. Payne and Jean Payne  
525 Sierra Drive, S. E.  
Albuquerque, N.M. 87108

Jo Ann Schmidt  
6819 Oaklawn Way  
Fair Oaks, Ca 95628

Eleanor R. Eisen  
3940 South Cherry Street  
Englewood, Co 80110

Theodor S Rittenberg  
9637 East Arbor Place  
Englewood, Co. 80111

Inez K. Gross  
20 East 35th Street  
Apt. 14G  
New York, N.Y. 10016

Robert Dunlap  
2419 East Cedar Canyon Road  
Fort Wayne, In 46845

Sheldon Gardner  
4804 Osuna Place N.E.  
Albuquerque, N.M. 87111

Elizabeth Verplank  
938-B Henrietta Drive  
Gallup, N.M. 87301

Mary T. Jarchow  
3580 W. Oak Trail Road  
Santa Ynez, Ca 93460

July 22, 1997

Working Interest and Royalty Owners

**Re: Administrative Approval of Downhole Commingling for  
Chateau Oil & Gas, Inc. Kaufman 1E, Basin Dakota & Flora Vista Gallup  
Dual, 857' FSL & 1827' FEL, Sec 33, T31N, R13W  
San Juan County, New Mexico**

Gentlemen:

Chateau Oil and Gas, Inc. is applying to the New Mexico Oil Conservation Division, as outlined in the NMOCD Rule 303C, for administrative commingle of the Dakota and Gallup zones in the subject well. These zones have already been approved by the Commission for the downhole commingling in the area. We are therefore notifying you of our intent to commingle the same zones in the referenced well. Enclosed for your information is a copy of the Application for Downhole Commingling Form C-107-A. Shown on the Form is the Fixed Percentage Allocation Formula -% for each zone which has been calculated based on the historical cumulative production.

If you have any objection to this application, you may contact John V. Peters or Dana M. Dutcher at Chateau Oil and Gas, Inc., 5950 Berkshire lane, Suite 275, Dallas, Texas 75225. You may also contact Mr. William J. LeMay at the New Mexico Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico 87505-6249.

If you have any questions concerning this request, please contact John V. Peters or Dana M. Dutcher at 214-891-3350.

Sincerely,

CHATEAU OIL AND GAS, INC.

John V. Peters  
Vice President - Operations  
JVP/jw

Enclosures

cc: N.M. Conservation Division, Santa Fe  
N. M. Conservation Division, Aztec  
BLM, Farmington

Irene Lanier  
411 Animas  
Aztec, N.M. 74100

Opal McDonnell Lowell  
407 North Ave F  
Olney, Tx 76374

Thelma Nickles  
P.O. Box 266  
La Plata, N.M. 74180

Kathryn B. Richardson  
c/o Paula Kaufman  
P.O. Box 91  
Glorietta, N.M. 87535

American Red Cross - Pennsylvania  
Southern Pennsylvania Chpt  
23rd & Chestnut Street  
Philadelphia, Pa 19103

Delaware State Escheator  
F/A/O Calvin Buckner &  
Mary Sue Buckner  
P.O. Box 8931  
Wilmington, De 19899

Horace F. McKay, Jr &  
Elmyra K. McKay  
Trust Dtd 12/19/88  
P.O. Box 14738  
Albuquerque, N. M. 87191

Delaware State Escheator  
F/A/O William Delaney &  
Bernice Delaney  
P.O. Box 8931  
Wilmington, De 19899

Dan Miles  
Box 856  
Los Alamos, N.M. 87544

Jack H. Owens  
3899 South Glencoe Street  
Denver, Co. 80237

Mary Kay Stein  
302 South Pinto Place  
Tuscon, Az 85749-6902

James Van Dittie  
1965 Mt Zion Drive  
Golden, Co 80401

Jane K. Beard  
4104 Lovers Lane  
Dallas, Tx 75225

W. Thomas Beard III  
P.O. Box 668  
Alpine, Texas 79830

Herbert Kokernot Lea  
434 Chemin St. Andre'  
13120 Gardanne  
France

Michael Scott Lea  
4251 So. Allison Street  
Lakewood, Co. 80235

Elizabeth Beard Tanksley  
P.O. Box 628  
Alpine, Tx. 79831

Dan Christensen Jr &  
Kathryn Christensen  
751 Morningside Drive, NE1  
Albuquerque, N.M. 87110

Mildred P. Corkum  
7617 - 112th Street S.W.  
Tacoma, Wa 98498