

SWD

10/29/97

BEC CORPORATION

P. O. BOX 1392
110 N. MARIENFELD, SUITE 370
MIDLAND, TEXAS 79702

(915) 682-1828
FAX (915) 682-7029

October 8, 1997

State of New Mexico
Oil Conservation Division
2040 Pacheco Street
Santa Fe, NM 87505

Re: APPLICATION FOR AUTHORIZATION TO INJECT
J. W. Grizzell "A" #4 formerly Gulf #133 SPSU
Penrose Skelly Grayburg Pool
Lea County, New Mexico

Ladies and Gentlemen:

BEC Corporation requests administrative approval of authorization to dispose of produced waters into the Grayburg Formation of the following well:

OPERATOR:	BEC Corporation P. O. Box 1392 Midland, TX 79702
WELL:	J. W. Grizzell "A" #4 (Gulf SPSU #133)
LOCATION:	Unit M 660' FSL & 660' FWL, Sec 5, T 22 S R 37 E Lea County, New Mexico

Enclosed are the following in support of this application:

1. Application
2. Plat of Area
3. Well Data Sheets
4. Offset Operators
5. Surface Owner
6. Copy of Legal Advertisement

Our J. W. Grizzell "A" #4 was last operated as an Injection Well in Gulf's South Penrose Skelly Unit. The well was T.A.'d 10/18/82.

Verbal permission was given by Jerry Sexton (NMOCG) to test the well. We have found the well takes produced water on a vacuum under a packer set @ 3100'.

The produced waters are from the Drinkard, Blinebry and Grayburg formations. BEC will operate a closed system disposing 100 - 300 BPWPD. Maximum pressure will not exceed 500 psi.

Data on the geology and lithology of the Grayburg has been filed with the Commission (5/2/67 - Gulf SPSU).

BEC Corporation has examined available geological and engineering data and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water. According to the New Mexico Water Commission, fresh water sources are above 150'.

Approval of this request will extend the productive life of the Blinebry, Drinkard and Grayburg formations of this lease.

By copy of legal advertisement, the landowner and all offset operators have been notified.

Very truly yours,



O. T. Maxwell
Production Superintendent

OTM/nlt

Enclosure

xc: Offset Operators & Surface Owner (List Attached)

**J. W. Grizzell "A" #4
Offset Operators**

1. Arch Petroleum (Section 5)
10 Desta Drive, Suite 420 E
Midland, TX 79705
2. Texaco, Inc. (Section 8)
P. O. Box 3109
Midland, TX 79702
3. Zia Energy (Section 5, 6 and 7)
P. O. Box 2219
Hobbs, NM 88241
4. Dallas McCasland
P. O. Box 206
Eunice, NM 88231

Surface Owner

Lucy Flowers
P. O. Box 1453
Hobbs, NM 88241

DYNOCHEM

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"Since 1974"

Chemicals & Service for the Petroleum Industry  
P.O. Box 2580 / MIDLAND, TX 79702 / (915) 683-7132

## WATER ANALYSIS REPORT

### SAMPLE

Oil Co. : BEC  
Lease : J.W.GRIZZELL  
Well No. : FRESH WATER  
Formation:

Sample Loc. :  
Date Sampled : 17-September-1997  
Attention :  
Analysis No. :

### ANALYSIS

MG/L EQ. WT. \*MEQ/L

1. pH 7.000  
2. Specific Gravity 60/60 F. 1.004  
3. CaCO<sub>3</sub> Saturation Index @ 80 F. +0.074  
@ 140 F. +0.774

#### Dissolved Gasses

4. Hydrogen Sulfide 0  
5. Carbon Dioxide Not Determined  
6. Dissolved Oxygen Not Determined

#### Cations

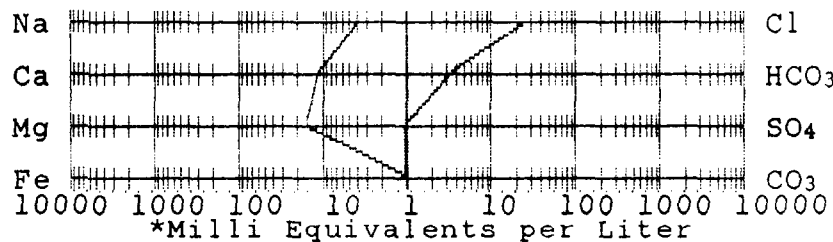
- |                                           |     |   |        |       |
|-------------------------------------------|-----|---|--------|-------|
| 7. Calcium (Ca <sup>++</sup> )            | 240 | / | 20.1 = | 11.94 |
| 8. Magnesium (Mg <sup>++</sup> )          | 194 | / | 12.2 = | 15.90 |
| 9. Sodium (Na <sup>+</sup> ) (Calculated) | 87  | / | 23.0 = | 3.78  |
| 10. Barium (Ba <sup>++</sup> )            | 00  |   |        |       |

#### Anions

- |                                                  |            |   |        |       |
|--------------------------------------------------|------------|---|--------|-------|
| 11. Hydroxyl (OH <sup>-</sup> )                  | 0          | / | 17.0 = | 0.00  |
| 12. Carbonate (CO <sub>3</sub> <sup>=</sup> )    | 0          | / | 30.0 = | 0.00  |
| 13. Bicarbonate (HCO <sub>3</sub> <sup>-</sup> ) | 214        | / | 61.1 = | 3.50  |
| 14. Sulfate (SO <sub>4</sub> <sup>=</sup> )      | 0          | / | 48.8 = | 0.00  |
| 15. Chloride (Cl <sup>-</sup> )                  | 1,000      | / | 35.5 = | 28.17 |
| 16. Total Dissolved Solids                       | 1,735      |   |        |       |
| 17. Total Iron (Fe)                              | 0          | / | 18.2 = | 0.00  |
| 18. Total Hardness As CaCO <sub>3</sub>          | 1,401      |   |        |       |
| 19. Resistivity @ 75 F. (Calculated)             | 3.596 /cm. |   |        |       |

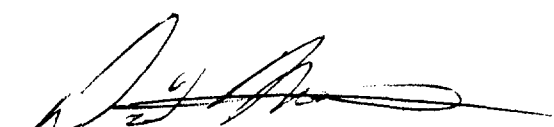
#### LOGARITHMIC WATER PATTERN \*meq/L.

#### PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X \*meq/L = mg/L.



Calculated Calcium Sulfate solubility in this brine is 2,083 mg/L. at 90 F.

|    |                  |                                    |       |       |     |
|----|------------------|------------------------------------|-------|-------|-----|
| Na | Cl               | Ca(HCO <sub>3</sub> ) <sub>2</sub> | 81.04 | 3.50  | 284 |
| Ca | HCO <sub>3</sub> | CaSO <sub>4</sub>                  | 68.07 | 0.00  | 0   |
| Mg | SO <sub>4</sub>  | CaCl <sub>2</sub>                  | 55.50 | 8.44  | 468 |
| Fe | CO <sub>3</sub>  | Mg(HCO <sub>3</sub> ) <sub>2</sub> | 73.17 | 0.00  | 0   |
|    |                  | MgSO <sub>4</sub>                  | 60.19 | 0.00  | 0   |
|    |                  | MgCl <sub>2</sub>                  | 47.62 | 15.90 | 757 |
|    |                  | NaHCO <sub>3</sub>                 | 84.00 | 0.00  | 0   |
|    |                  | NaSO <sub>4</sub>                  | 71.03 | 0.00  | 0   |
|    |                  | NaCl                               | 58.46 | 3.83  | 224 |

  
Analyst

# DYNOCHEM

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Chemicals & Service for the Petroleum Industry  
P.O. Box 2580 / MIDLAND, TX 79702 / (915) 683-7132

## WATER ANALYSIS REPORT

### SAMPLE

Oil Co. : BEC  
Lease : J.W. GRIZZEL  
Well No. : #1  
Formation:

Sample Loc. : WELLHEAD  
Date Sampled : 13-March-1997  
Attention :  
Analysis No. : 141

### ANALYSIS

MG/L EQ. WT. \*MEQ/L

1. pH 7.000
2. Specific Gravity 60/60 F. 1.094
3. CaCO<sub>3</sub> Saturation Index @ 80 F. +1.042  
@ 140 F. +1.962

#### Dissolved Gasses

4. Hydrogen Sulfide 0
5. Carbon Dioxide 30
6. Dissolved Oxygen Not Determined

#### Cations

- |                                           |        |   |      |   |          |
|-------------------------------------------|--------|---|------|---|----------|
| 7. Calcium (Ca <sup>++</sup> )            | 13,707 | / | 20.1 | = | 681.94   |
| 8. Magnesium (Mg <sup>++</sup> )          | 5,592  | / | 12.2 | = | 458.36   |
| 9. Sodium (Na <sup>+</sup> ) (Calculated) | 30,696 | / | 23.0 | = | 1,334.61 |
| 10. Barium (Ba <sup>++</sup> )            | 0      | / | 68.7 | = | 0.00     |

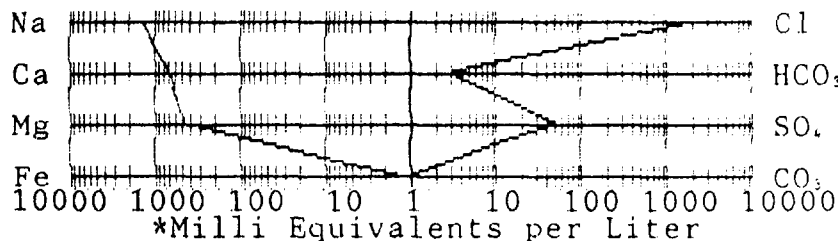
#### Anions

- |                                                  |        |   |      |   |          |
|--------------------------------------------------|--------|---|------|---|----------|
| 11. Hydroxyl (OH <sup>-</sup> )                  | 0      | / | 17.0 | = | 0.00     |
| 12. Carbonate (CO <sub>3</sub> <sup>-</sup> )    | 0      | / | 30.0 | = | 0.00     |
| 13. Bicarbonate (HCO <sub>3</sub> <sup>-</sup> ) | 183    | / | 61.1 | = | 3.00     |
| 14. Sulfate (SO <sub>4</sub> <sup>-</sup> )      | 2,450  | / | 48.8 | = | 50.20    |
| 15. Chloride (Cl <sup>-</sup> )                  | 85,981 | / | 35.5 | = | 2,422.00 |

- |                                         |            |   |      |   |      |
|-----------------------------------------|------------|---|------|---|------|
| 16. Total Dissolved Solids              | 138,609    |   |      |   |      |
| 17. Total Iron (Fe)                     | 25         | / | 18.2 | = | 1.37 |
| 18. Total Hardness As CaCO <sub>3</sub> | 57,251     |   |      |   |      |
| 19. Resistivity @ 75 F. (Calculated)    | 0.045 /cm. |   |      |   |      |

#### LOGARITHMIC WATER PATTERN

\*meq/L.



Calculated Calcium Sulfate solubility in this brine is 1,282 mg/L. at 90 F.

#### PROBABLE MINERAL COMPOSITION

| COMPOUND                           | EQ. WT. | X        | *meq/L | = mg/L. |
|------------------------------------|---------|----------|--------|---------|
| Ca(HCO <sub>3</sub> ) <sub>2</sub> | 81.04   | 3.00     |        | 243     |
| CaSO <sub>4</sub>                  | 68.07   | 50.20    |        | 3,417   |
| CaCl <sub>2</sub>                  | 55.50   | 628.74   |        | 34,895  |
| Mg(HCO <sub>3</sub> ) <sub>2</sub> | 73.17   | 0.00     |        | 0       |
| MgSO <sub>4</sub>                  | 60.19   | 0.00     |        | 0       |
| MgCl <sub>2</sub>                  | 47.62   | 458.36   |        | 21,827  |
| NaHCO <sub>3</sub>                 | 84.00   | 0.00     |        | 0       |
| NaSO <sub>4</sub>                  | 71.03   | 0.00     |        | 0       |
| NaCl                               | 58.46   | 1,334.90 |        | 78,038  |

*R. J. Mac*  
Analyst

**LEGAL NOTICE**  
**October 10, 1997**

BEC Corporation, P.O. Box 1392, Midland, Texas 79702, has submitted an application to inject to the New Mexico Oil Conservation Division for the J.W. Grizzell "A" #4 - SWD Well located 660' FSL & 660' FWL, Sec 5, T-22S, R-37E Lea County, NM. We propose to inject into the Grayburg formation at a depth between 3144'-3166' feet at a maximum injection rate of 100-300 BDPW at 1000 PSI. Any party interested in filing objections or requests for hearing must contact the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, NM 87504-2088 within 15 days. For additional information contact O.T. Maxwell at 915-682-1828.  
#15475

# Advertising Receipt

**Hobbs Daily News-Sun**

201 N Thorp  
P.O. Box 860  
Hobbs, NM 88241  
Phone: (505) 393-2123  
Fax: (505) 393-5724

O.T. Maxwell  
BEC Corporation  
P.O. Box 1392  
MIDLAND, TX 79702

**Cust#:** 01102535-000  
**Ad#:** 01511770  
**Phone:** (915) 682-1828  
**Date:** 10/06/97

**Ad taker:** TC

**Salesperson:**

**Classification:** 671

| Description       | Start    | Stop     | Ins. | Cost/Day | Surcharges | Total |
|-------------------|----------|----------|------|----------|------------|-------|
| 01 Daily News-Sun | 10/08/97 | 10/08/97 | 1    | 13.97    |            | 13.97 |

**Payment Reference:**

**Total:** 13.97

**Tap:** 0.84

**Net:** 14.81

**Prepaid:** 14.81

**LEGAL NOTICE**

October 8, 1997

BEC Corporation, P.O. Box 1392, Midland, Texas 79702, has submitted an application to inject to the New Mexico Oil Conservation Division for the J.W. Grizzell "A" #4 - SWD Well located 660' FSL & 660' FWL, Sec 5, T-22S, R-37E Lea County, NM. We propose to inject into the Grayburg formation at a depth between 3144'-3166' feet at a maximum injection rate of 100-300 BD PW at 1000 PSI. Any party interested in filing objections or requests for hearing must contact the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, NM 87504-2088 within 15 days. For additional information contact O.T. Maxwell at 915-682-1828.  
#15475

**Total Due** 0.00

*Check*

**DISTRIBUTION:** Original and one copy to Santa Fe with one copy to the government of Mexico. (1)



Side 2

**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, PO Box 2088, Santa Fe, NM 87504-2088 within 15 days.

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

**NOTICE:** Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

# INJECTION WELL DATA SHEET

Tubing Size 2 3/8" J-55 lined with PVC set in a  
 Baker AD-1 packer at 3150 feet  
 (type of internal coating)

Other type of tubing / casing seal if applicable \_\_\_\_\_

## Other Data

1. Is this a new well drilled for injection? Yes ☒ No

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

2. Name of the injection formation Grayburg

3. Name of Field or Pool (if applicable) Penrose-Skelly-Grayburg

4. Has the well ever been perforated in any other zone(s)? Yes all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. No

5. Give the names and depths of any over or underlying oil or gas zones (pools) in this area.

Queen 3334' San Andres 3837'

\_\_\_\_\_  
 \_\_\_\_\_

# INJECTION WELL DATA SHEET

OPERATOR

BEC CORPORATION

LEASE

J.W. GRIZZELL "A"

WELL NO.

NO. 4

660' FSL & 660' FUL  
FOOIAGE LOCATION

SECTION

5

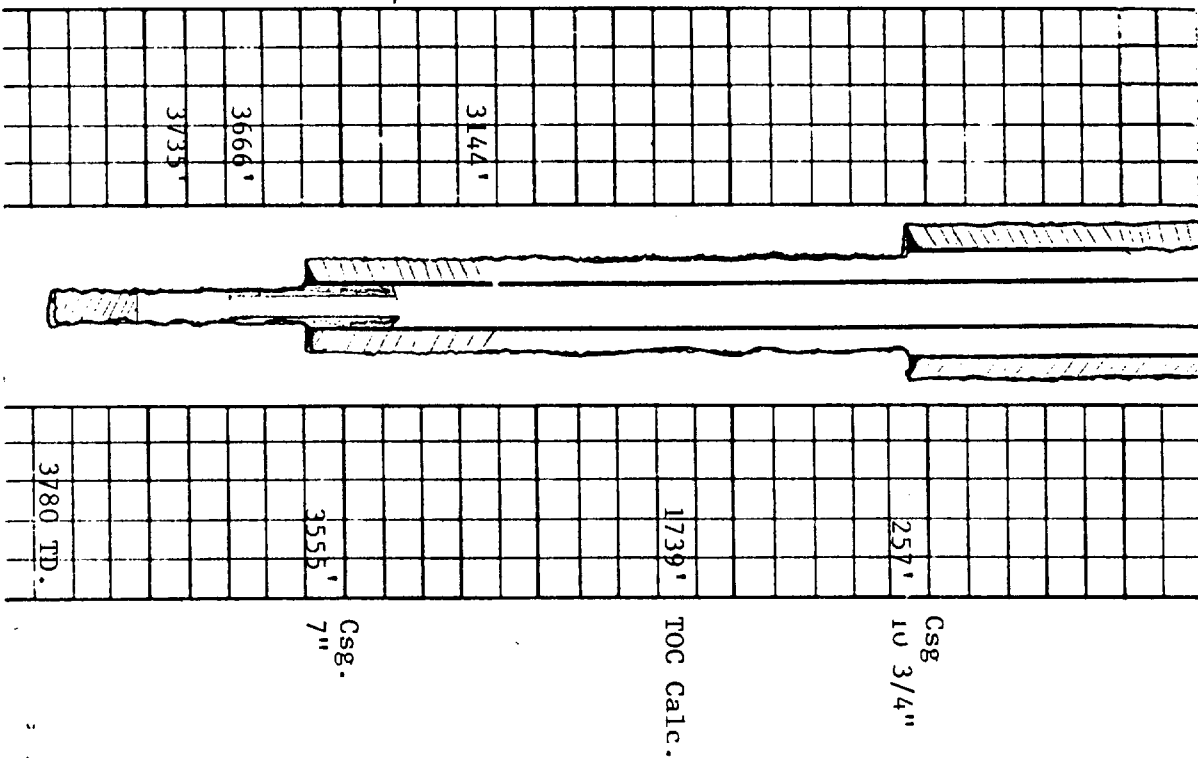
TOWNSHIP

22S

RANGE

37E

Schematic



## Well Construction Data

Surface Casing  
Size 10 3/4" Cemented with 257 SX

TOC SURFACE best determined by CIRCULATION

Hole Size 17 1/2"

## Intermediate Casing

Size 7" Cemented with 350 SX

TOC 1739 best determined by Calc.

Hole Size 8 3/4"

## Long String (LINER)

Size 4 1/2", 9.5#, J-55 Cemented with 120 SX

TOC 3144 best determined by circ.

Hole Size 6 1/8"

Total Depth 3144' - 3666'

## Injection Interval

3666' feet to 3735' OH feet

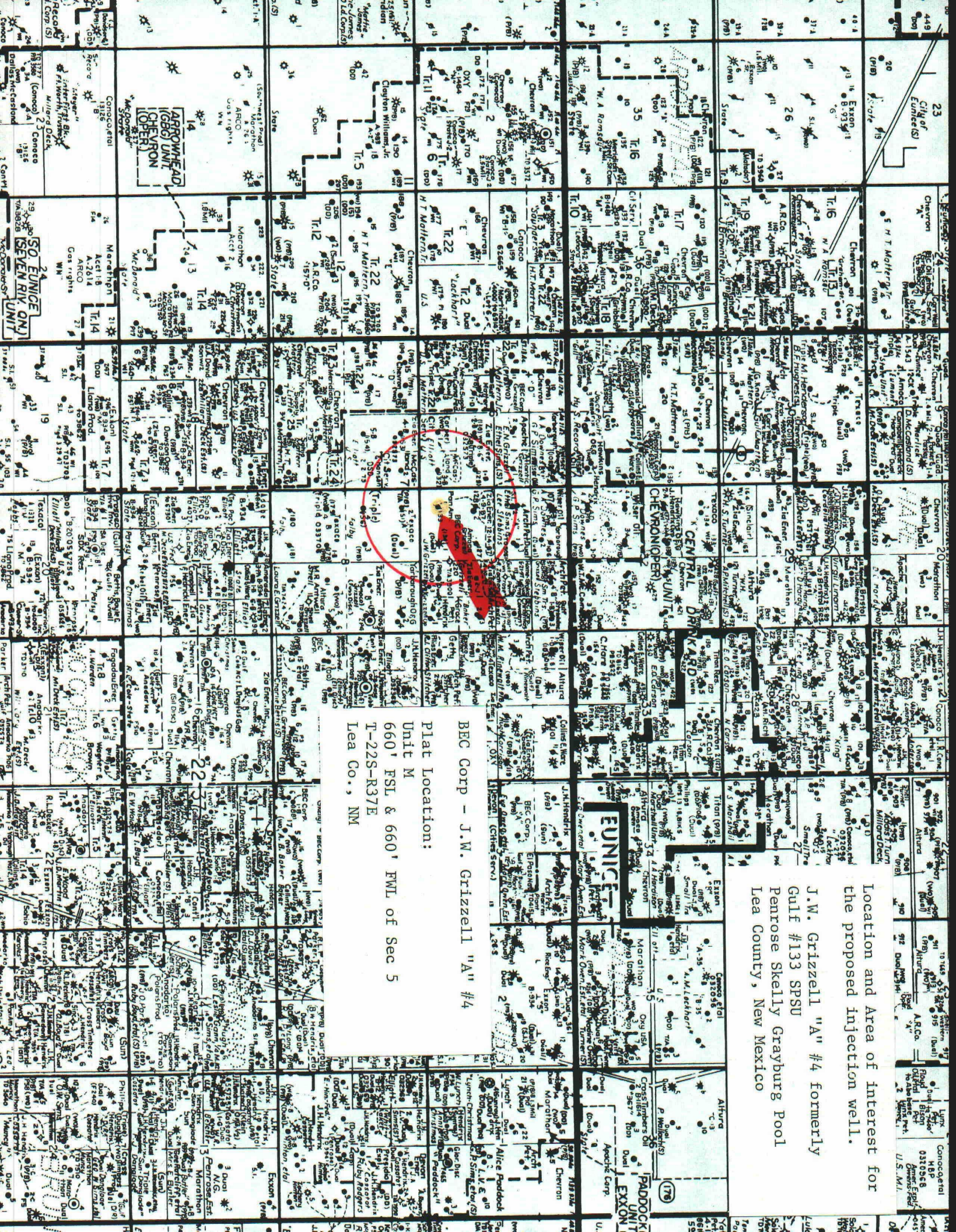
4 1/2"  
OH  
PBD



Location and Area of interest for the proposed injection well.

J.W. Grizzell "A" #4 formerly Gulf #133 SPSU Penrose Skelly Grayburg Pool Lea County, New Mexico

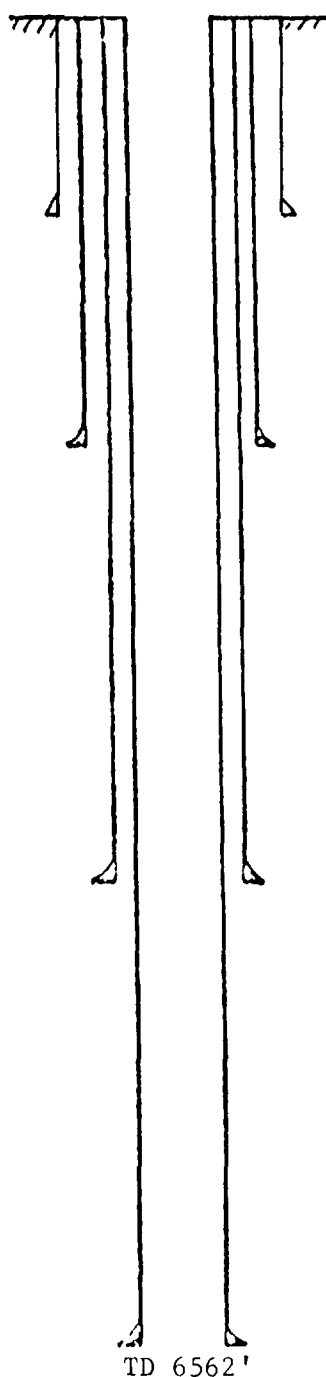
BEC Corp - J.W. Grizzell "A" #4  
Unit M  
660' FSL & 660' FWL of Sec 5  
T-22S-R37E  
Lea Co., NM





|          |            |                |                                                     |
|----------|------------|----------------|-----------------------------------------------------|
| OPERATOR | Zia Energy | DATE           |                                                     |
| LEASE    | Grizzell   | WELL NO<br># 1 | LOCATION<br>660' FSL & 1980' FEL of Sec 5-T22S-R37E |

# Schematic



3442' DF.

Elev. 3442' DF. Grayburg: Open hole 3510' - 3765'  
Treated w/3000 GA

Drinkard: Open hole 6465' - 6562'  
Treated w/3000 GA, perf 6329 -  
6419', treated w/ 5000 GA &  
20,000 GGLO w/1 1/2# sd/gal.

13 " casin set @ 275 ' with 150 sx of NA cement  
Hole size 15 " , TOC @ surface determined by calculation.

8 5/8 " casing set at 1237 ' with 250 sx of NA cement  
Hole size 11 " , TOC @ 57' determined by calculation.

Stimulation: IP : Grayburg - 168 BOPD  
Drinkard - 288 BOPD + 352 MCF/D  
Blinbry - 16 EOPD + 450 MCF/D

7 " casing set at 3510 ' with 150 sx of NA cement  
Hole size 9 " , TOC @ 2479', determined by calcution.

5 1/2 " casing set at 0 - 3319'  
3319-6465 with 500 sx of NA cement  
Hole size NA " , TC @ surface determined by cmt circulation

Grizzell Deep

# 2

1900' FSL &amp; 860' FWL of Sec 5-T22S-R37E

API NO. 30-025-26149

Lea Co., New Mexico

Schematic

3449' Grd.  
TOC @ Surface

TOC of 5 1/2'  
@ 343' calc

Elev. 3449' Grd. Spud: 3-5-79 Comp: 5-29-79

IPP: P/25 BOPD + 11 BW, Grav NR, COR 60CO  
Comp Info: DST (San And) 3851-4000', op 1 hr,  
GTS/33 mins @ 112 MCFPD incr to 145 MCFPE/end  
of test, rec 150' FO + 1950' SW, 1 hr 9 min  
ISIP 1408#, FP 317-1238#, 9 hr 43 min FSIP 1408#,  
HP 2082-2065#, BHT 88 deg, Perf(Drinkard) 6656-64'  
w/2 SPF, A/1000 gals, S/55 BW/10 hrs, set RBP @  
6620', Perf (Drinkard) 6565-92' w/4 SPF, A/1000  
gals, S/15 BO + 28 BLW/8 hrs, A/5000 gals, S/19  
BO + 15 BLW/10 hrs, Ppd 9 BO + 21 BW/24 hrs, set RBP  
@ 6510', Perf (Drinkard) 6458-61', 6479-79', 6498-  
6501' w/4 SPF, A/4916 gals, S/40 BW/hrs, Pulled  
RBP @ 6510', pd 33 BO + 5 BW/24 Ppd 25 BC + 11 BW/  
24 hrs, ran CNDL, DILL, MICL Logs, C/Capitan

8 5/8" casing set at 1180' with 550 sx of N/A Cement

Hole size 12 1/4"

Prod. zone: (Drinkard) T/Pay 6458', Prod thru perfs  
6458-6644'

TD. 6750'

5 1/2" casing set at 6750' with 925 sx of N/A Ceme

Total Depth 6750' Hole size 7 7/8"

OPERATOR

Gulf Oil Corporation

CASE

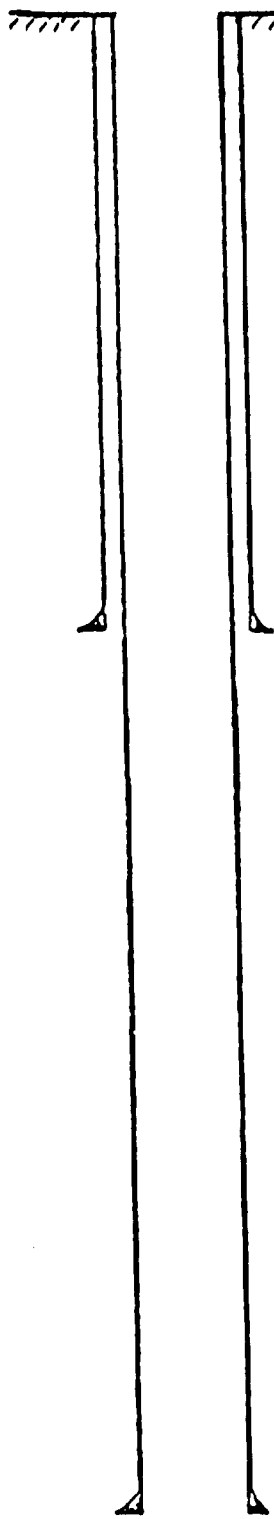
SPSU - Grizzell

WELL NO

# 220

LOCATION

1034' FSL 2635' FWL of Sec 5-T22S-r37E

Schematic

 3431' Grd.

Elev. 3431' Spud: 4-4-75 Comp: 7-7-75

Perf (Grayburg) 3814-16', 3819-21', 3828-30' w/2 SPF;  
A/200 gals; F/1000 MCFGPD w/spray cil/11 hr, 18/64  
ch, TP 600-800#

Perf (Grayburg) 3730-40 w/2 SPF; A/250 gals; f/638MCFGF  
+ 64 BW w/trace oil/8 hrs, TP 500#

Perf (Grayburg) 3659-74' w/2 SPF; A/180 gals; F/561  
MCFGPD + 173 BW/w trace oil/24 hrs, tp 500-580#

Perf (Queen) 3526-28', 3533-35', 3540-42' w/4 SPF;  
A/300 gals; Swbd dry.

8 5/8 " casing set at 1181' with 400 sx of NA Cement

Hole size 11 ". TOC @ surface determined by calculation.

5 1/2 " casing set at 3900 with 450 sx of NA Ceme

TD 3900'

Total Depth 3900 ' Hole size 7 3/8 ". TSTOC @ 2290'.

|                            |                |                                                    |  |
|----------------------------|----------------|----------------------------------------------------|--|
| OPERATOR<br>B.E.C Corp.    |                | DATE                                               |  |
| LEASE<br>J.W. Grizzell "A" | WELL No<br># 3 | LOCATION<br>1980' FSL & 660' FWL of Sec 5-T2S-R37E |  |

### Schematic

3451 Grd.

Elev. 3451' Grd. Spud: 7-1-37 Comp: 8-3-37

IP: 180 BO/12 hrs. 200,000 gas vol. thru 2"  
T/Pay 3730-77', Acidize w/3000 gals.

10 3/4" casing set at 293' with 200 sx of N/A cement  
Hole size 15" Circulated

7" casing set at 3426' with 250 sx of N/A cement  
Hole size 9 5/8" TOC @ 2376', determined by calculation.

2" Tbg set at 3776' with N/A sx of N/A cement  
Hole size "

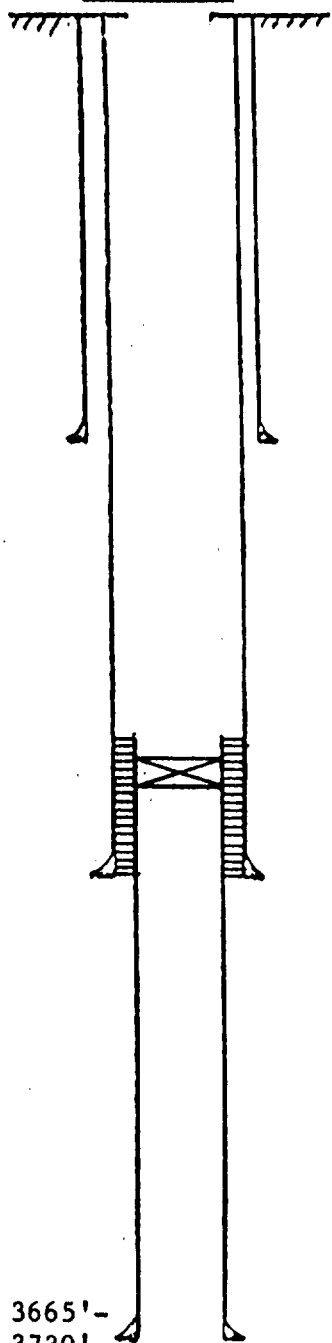
TD. 3780'

Total Depth 3780'



|           |                   |          |                                          |
|-----------|-------------------|----------|------------------------------------------|
| PROPERTY  | BEC CORPORATION   |          | DATE                                     |
| WELL NAME | J.W. Grizzell "A" | WELL NO. | LOCATION                                 |
|           |                   | # 2      | 1980' FSL & 1980' FWL of Sec 5-T22S-R37E |

# Schematic



3445' Grd.

Elev. 3445' Grd. Spud: 5-13-37 Comp. 6-26-97

IP: 128 bo/14 hrs. thru csg. 3.5 MCFG

T/Pay 3690', Shot 260 qteq 3690-3760', results: 3 BOPH

5/2/67 Converted to a water injection well

10/18/82 TA

10 " casing set at 290 ' with 200 sx of NA cement  
Hole size 16 1/4 ". TOC @ surface determined by calculation.

Liner Top @ 3225'

6 5/8" casing set at 3419 ' with 300 sx of NA cement  
Hole size 8 5/8 ". TOC @ 1616', determined by calculation.

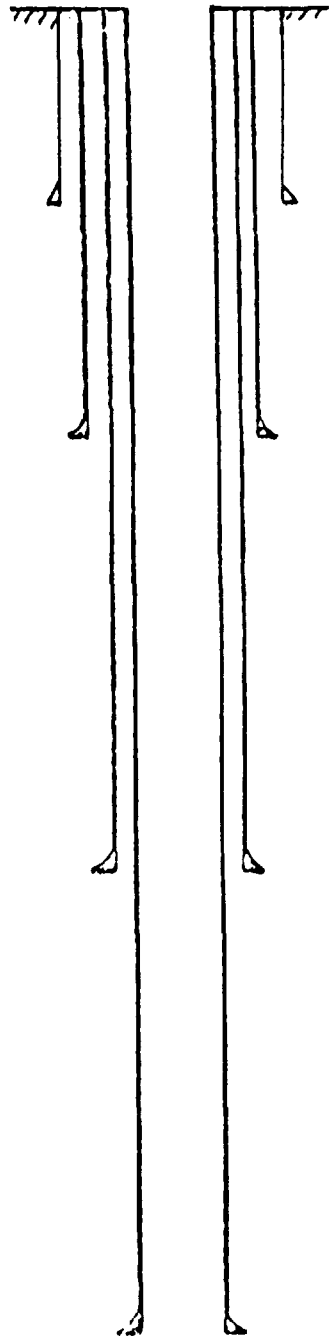
: 3665'-  
3730'

4 1/2 " Liner set at 3665 ' with 67 sx of Incor Neat cement  
Hole size 5 5/8 ". TOC @ 3225', circulated.

Total Depth 3760' PBTD' 3730'

|          |                 |                                                                           |
|----------|-----------------|---------------------------------------------------------------------------|
| OPERATOR | BEC. CORP.      | DATE                                                                      |
| LEASE    | Grizzell "DEEP" | WELL NO<br># 1         LOCATION<br>1980 FWL & 660' FSL of Sec 5-T22S-R37E |

Schematic



3430' GL.

Elev. 3430'

Stimulation: Penrose Skelly - open hole 3673'-3777'  
 Drinkard - open hole 6494' - 6565' Treated  
 w/9000 GA

IPP: (DRKD) 130 BOPD + 540 MCF/D

(Pen-Skelly) NA

12 1/2 " casing set at 284' with 300 sx of NA cement

Hole size 18", TOC @ surface, determined by calculation.

8 1/4 " casing set at 1256' with 50 sx of NA cement

Hole size 10 3/4", TOC @ 631', determined by calculation.

7" casing set at 3573' with 100 sx of NA cement

Hole size 8 1/4", TOC @ 2323', determined by calculation.

5" casing set at 6494' with 300 sx of NA cement

Hole size 6 1/4", TOC @ 1800', determined by calculation.

TD. 6565'

|          |                                    |        |                                         |
|----------|------------------------------------|--------|-----------------------------------------|
| OPERATOR | Chevron USA, INC. (Gulf Oil Corp.) |        | DATE                                    |
| LEASE    | Lee Stebbins (NCT-A)               | WELL # | 1830' FNL & 660' FWL of Sec 5-T2-S-R37E |

# Schematic

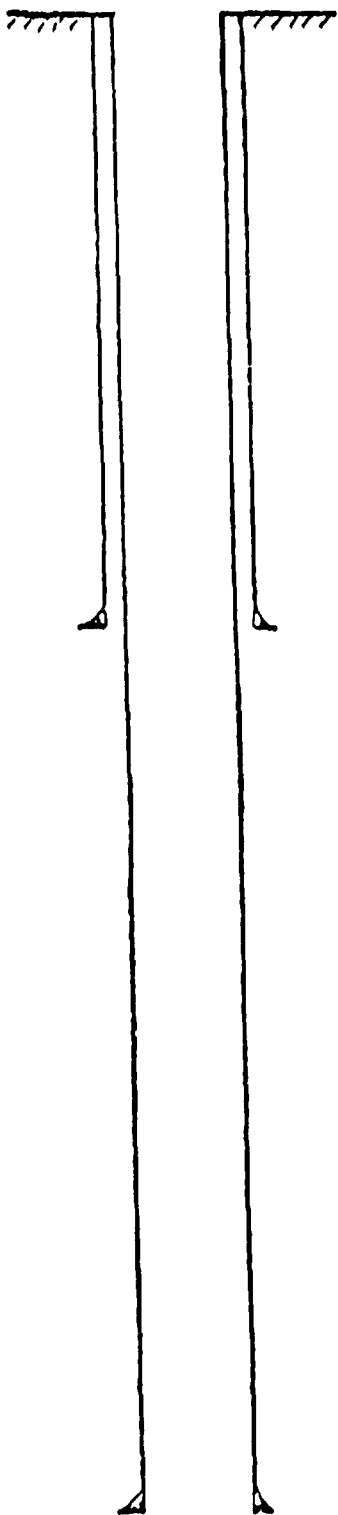
3440' Grd.

Elev. 3440' Grd. Spud: 12-14-76 Comp 2-23-77  
 Perf (Drinkard) T/Pay 6456', 6456-6650'  
 IPP: 20 BOPD + 12 BW, GOR TSTM  
 Stimulation: 5000 gal.

8 5/8 " casing set at 1210 ' with 550 sx of NA Cement  
 Hole size 12 1/4 ". TOC @ surface, determined by calculation.

TD 6750'

5 1/2 " casing set at 6750 ' with 1785 sx of NA Ceme  
 Total Depth 6750 ' Hole size 7 7/8 "  
 TOC @ surface determined by circulation

Schematic

3441' DF. 3429' Grd.

Elev. 3429' Grd. Spud: '1-27-81 COMP: NA

IPP: 3 BO & 2 BW/24 hrs., Fuss. 7200-12', PI  
 19 BO & 19 BW/24 hrs., Mon.: 7256-7360', P  
 Comp Info: Pf/7256-7360', A/1500 & Pf/20/ 720  
 -12' (Fuss.) A/1700, F/6 BW 10 min 7 died.  
 S/79 BW tr oil/6' P/3 BO, 12 BW/24', SWF/30, C  
 x 17,500# (7200-12), S/148 BL/3 1/2"  
 Re-comp: Cmt ret. @ 7168' sqzd 2200-7360' w/10  
 sx, new prod. intervals: (Drinkard) 6426-6541  
 w/26 shots, acid 6126-6541, w/5000 gals % NE.  
 Drinkard perfs below CIBP @ 4511' & 20' of cmt

9 5/8 " casing set at 1185 ' with 825 sx of NA Cement

Hole size 12 1/4". TOC @ surface determined by calculation.

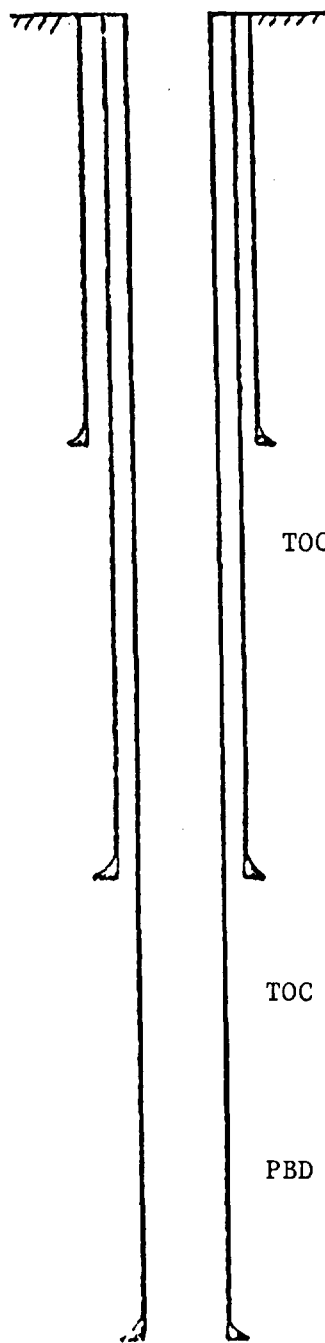
5 1/2 " casing set at 7500 ' with 1100 sx of NA Cement

Total Depth 7500 ' Hole size 8 3/4". TOC @ 2710', determined  
 PBD 7168 ' by calculation.

TD 7500'

|                              |                  |                                                       |
|------------------------------|------------------|-------------------------------------------------------|
| OPERATOR<br>Zia Energy, Inc. |                  | DATE                                                  |
| LEASE<br>Grizzell            | WELL No<br># 2-J | LOCATION<br>1980' FSL & 1980' FEL os Sec 5-T, 2s-R37E |

Schematic



3440' Grd

Elev. 3440' Grd.

TOC @ Surface

Stimulation: Grayburg - open hole @ 3468 - 3750',  
treated w/3000 GA. Perfs 3616' - 3692'  
treated w/2000 GA.

Drinkard - open hole 6515' - 6580',  
treated w/3000 GA.

Grayburg - 144 BOPD + 500 MCF/D  
Drinkard - 130 BOPD + 113 MCF/D

Surface casing

9 5/8" casing set at 259' with 200 sx of N/A cement

Hole size 11" TOC Surface

TOC 675'

Intermediate Casing

7" casing set at 3468' with 350 sx of N/A cement

Hole size 8 3/4" TOC 675'

TOC 3336'

PBD 3877'

Long String

5" casing set at 3352' - 6515' with 300 sx of N/A cement

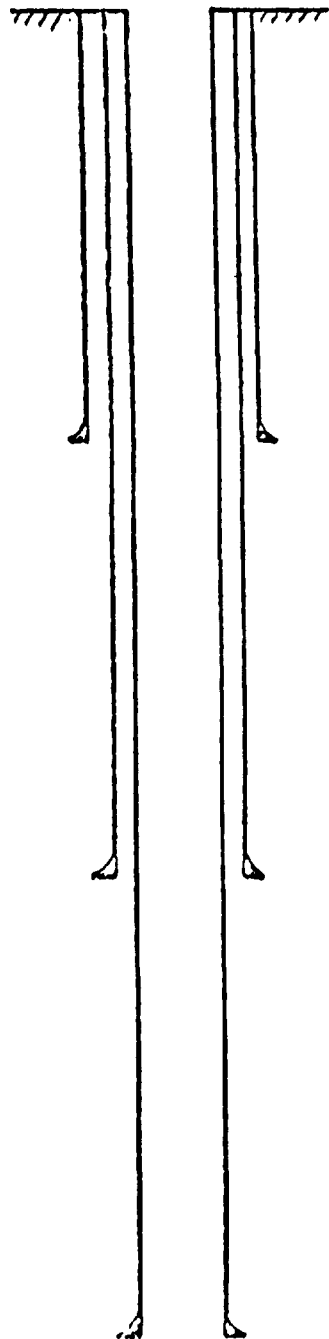
Hole size 6 1/4" Total Depth: 6580'

TD. 6580'

|                              |                   |                                                     |  |      |
|------------------------------|-------------------|-----------------------------------------------------|--|------|
| OPERATOR<br>Zia Energy, Inc. |                   | CONTINENTAL OIL CO.                                 |  | DATE |
| LEASE<br>Elliot              | WELL NO.<br>1-B-6 | LOCATION<br>1980' FSL & 660' FEL of Sec 6-T225-R37E |  |      |

Lea Co., New Mexico

Schematic



Elev. 3445' Spud: 10-12-37 Spud: 11-14-37  
 IPF: Flowed 41 BO/11 hrs. thru 20/64" choke  
 TC 280,000 gas

Remarks; SO & G 3537-45', Top of the Pay 3715'  
 Comp. Info: 4000 gals of acid

10 3/4" casing set at 206' with 225 sx of NA cement  
 Hole size 15". TOC @ surface by calculations.

7 5/8" casing set at 1188' with 425 sx of NA cement  
 Hole size 9 5/8". TOC @ surface by calculations.

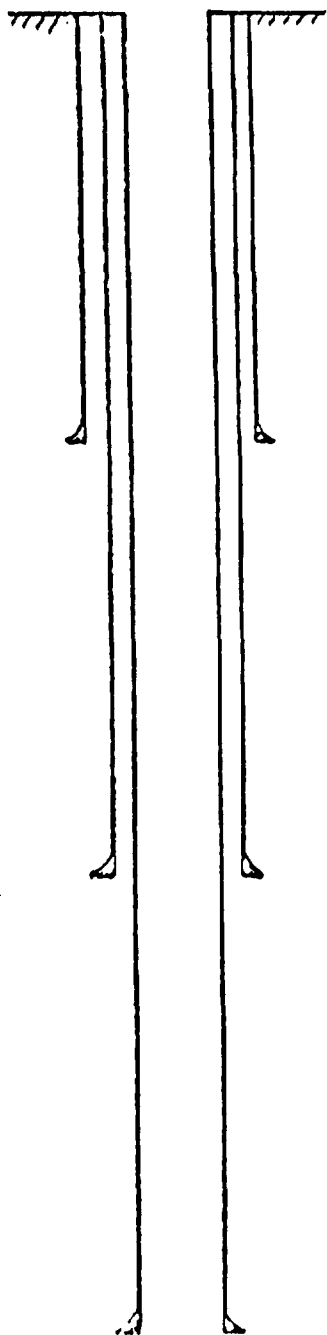
5 1/2" casing set at 3424' with 425 sx of NA cement  
 Hole size 6 5/8". TOC @ surface by calculations.

2" Tbg set to 3777'

|          |                  |         |                     |                                                      |
|----------|------------------|---------|---------------------|------------------------------------------------------|
| OPERATOR | Zia Energy, Inc. | drld by | Continental Oil Co. | DATE                                                 |
| LEASE    | Elliot           | WELL NO | 2-B-6               | LOCATION<br>1980' FSL & 1980' FEL of Sec 6-T22S-R37E |

Lea Co., New Mexico

Schematic



3458'

Elev. 3458' Spud: 10-19-37 Comp: 11-23-37

IPF: Flowed 21 BOPH THRU 3/4" choke, TC 636,000 gas

Remarks: BS flowed 25 BO/16 hrs. on gas lift'  
Comp. Info: Shot 600 qts. perfs 2550-3796'

10 3/4" casing set at 301' with 250 sx of NA cement  
Hole size 15". TOC @ surface determined by calculation.

7 5/8" casing set at 1160' with 425 sx of NA cement  
Hole size 9 5/8". TOC @ surface determined by calculation.

5 1/2" casing set at 3416' with 425 sx of NA cement  
Hole size 6 5/8". TOC @ surface determined by calculation.

TD. 3796'

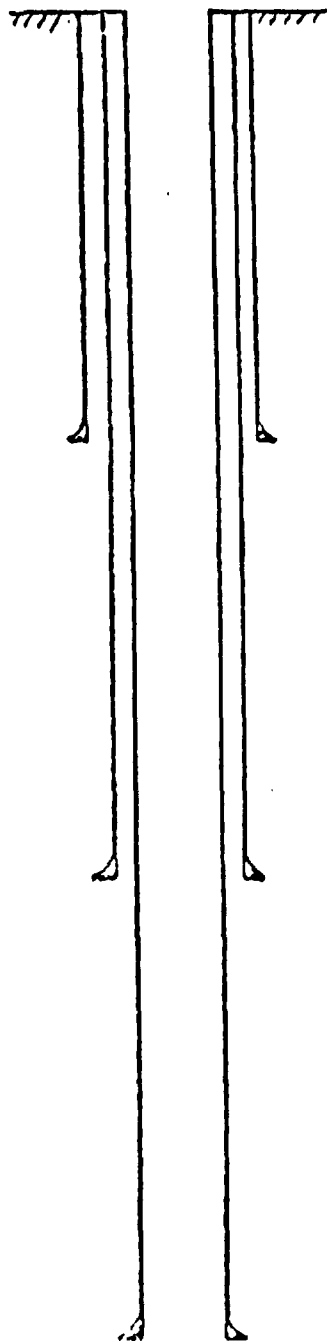
2" Tbg. set to 3743'



|                                                          |                  |                                                    |
|----------------------------------------------------------|------------------|----------------------------------------------------|
| OPERATOR<br>Zia Energy, Inc. drld by Continental Oil Co. |                  | DATE                                               |
| LEASE<br>Elliot                                          | WELL NO<br>3-B-6 | LOCATION<br>660' FSL & 660' FEL of Sec 6-T22N-R37E |

Lea Co., New Mexico

Schematic



3440'

Elev. 3440' Spud: 10-25-37 Comp: 3-21-38

IPF: Flowed 174 BF/13 Hrs., 10% BS&W thru 3/4"  
TC 3,062,000 Gas

Remarks: SG 3547 1 MG

Comp. Info: shot 28- cts. 3585-3778' w/4000 gals acid.

10 3/4" casing set at 298' with 225 sx of NA cement

Hole size 15". TOC @ surface circulated.

7" casing set at 1182' with 425 sx of NA cement

Hole size 9 5/8". TOC circulated and determined thru calculations.

5 1/2" casing set at 3435' with 425 sx of NA cement

Hole size 6 1/8". TOC circulated by calculation.

2" Tbg set at 3589'

TD. 3778'

OPERATOR

Dallas McCasland drld by Carper Drilling Co.

LEASE

Elliot

# 1

660' FSL &amp; 1980' FEL of Sec 6-T22S-R37E

Lea Co., New Mexico  
Penrose Skelly FieldSchematic

3452' DF

Elev. 3452' DF Spud: 12-20-49 Comp: 3-9-50

IPF: 40 BO &amp; 10 Bbls salt water/24 hrs. on 2" 3714'

DST: 3505-3650' op 1 hr 5 min, gas in 40 min, rec  
360' GCM; at TD washed w/500 gals mud acid &  
TR/5000 gals reg acid; swb & flwd 54 BO/24 hrs,  
SI/4 days & flwd 11 BO/1 hr & died; swbd average  
45 BFPD est 35% wtr.

' Top of Pay: 3750'

10 3/4 " casing set at 300 ' with 250 sx of NA CementHole size 15 " TOC @ surface by calculations.5 1/2 " casing set at 3650 ' with 500 sx of NA Cemen

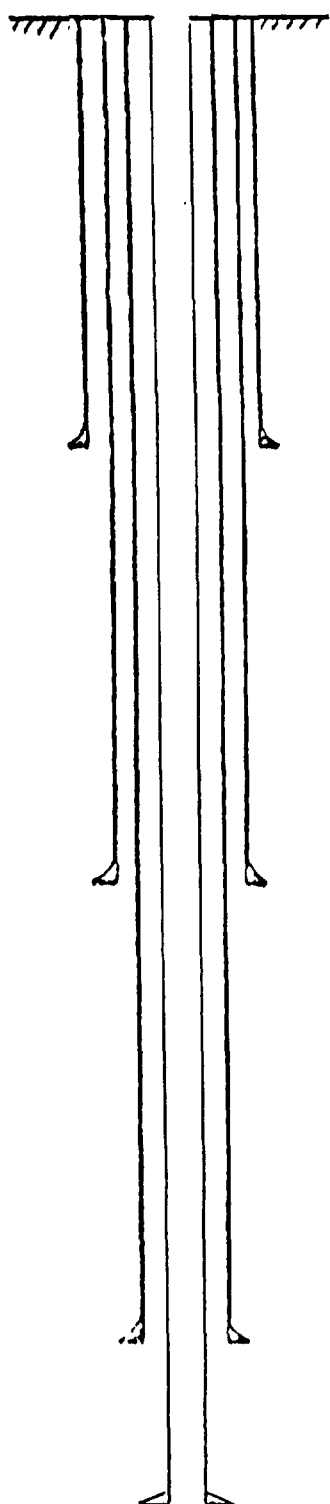
TD. 3771'

Total Depth 3771 ' Hole size 9 5/8 ". TOC @ 2034', determined  
by calculation.

|           |                                         |             |      |
|-----------|-----------------------------------------|-------------|------|
| CREATOR   | Zia Energy, Inc. drld by                | Conoco Inc. | DATE |
| WELL NAME | ELLIS                                   | WELL NO.    | 6-B  |
| LOCATION  | 1980' FSL & 1780 FEL of Sec 6-T22S-R37E |             |      |

API NO. 30-025-24544  
Schematic

Lea Co., New Mexico  
Tubb Field



3447' Grd.

Elev. 3447' Grd, Spud: 6-13-84 Comp. 10-3-84

IPP: 8 BOPD + 13BW; GOR (NR)  
Prod. Zone: (Tubb), Prod thru Perfs 6171-6328'  
Comp. Info: Perf (Tubb) 6171-6328', A/756 gals  
(15% HCL), A/5376 gals (28% HCL), pkd off  
(Blinebry) perfs 5524-5776 & (Drinkard) perfs  
6595-6701'

13 3/8" casing set at 510' with 450 sx of NA cement  
Hole size 16". TOC @ surface determined by calculation.

9 5/8" casing set at 3897' with 400 sx of NA cement  
Hole size 12 1/4". TOC @ 2493', determined by calculation.

PB 6718'

7" casing set at 6776' with 200 sx of NA cement  
Hole size 8 5/8"

2 7/8' set at 6320'. TOC @ 5188', determined by calculation.

TD. 9466'  
Granite Wash

OPERATOR

Zia Energy Inc.

DATE

CASE

J.W. Grizzell

WELL #

# 1

LOCATION

660' FSL &amp; 1980' FEL of Sec 6-T22S-R37E

Lea Co., New Mexico

Schematic

3431' D.F.

Elev. 3431' D.F., ReSpud: 12-10-74 Comp: 2-6-75  
IPP: 16 BO/24 hrs. w/2 BW. Old prod. zone: OH  
3675-3765', reworked 1950 @ NTD 6562', ran 5 1/2" csg,  
Prod. Int 6465-6562' (OH)  
Reworked 1973, prod. perfs & OH 6329-6562'.

New Work Done: Perf (Bline) 1 @ 5562, 5572, 5579, 5579,  
5583, 5591, 5602, 5611, 5617, 5629, 5648, 5667, 5679,  
5688, 5728, 5737, 5745, 5755, 5745, 5755, 5764, 5774,  
5790, 5807, 5821, 5833, 5838, 5853, 5859, A/3000. SWF  
30,000 x 37,500

7" casing set at 3505' with NA sx of NA Cement

Hole size 8"

Prod. Zone:

BLINEBRY: 5562-5906' or 5562-5906'

5 1/2" casing set at 6465' with 500 sx of NA Cement

Total Depth 6562' Hole size 6 1/4"

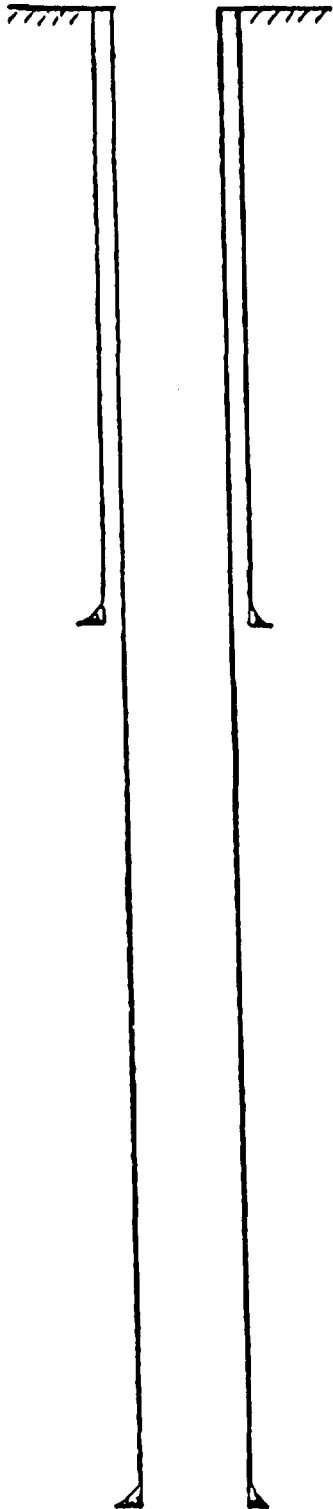
TOC @ surface determined by calculation.

TD. 6562'

|          |                                                      |   |                                     |
|----------|------------------------------------------------------|---|-------------------------------------|
| OPERATOR | Dallas McCasland drld by (Carper, Barnett, & Hanson) |   | DATE                                |
| CASE     | Elliot                                               | 2 | 660' FNL & 660' FEL Sec 7-T22S-R37E |

Lea Co., New Mexico  
Penrose Skelly Field

SCHEMATIC



Spud: 12-22-46, Comp: 1-20-49

IPF: 100 BOPD on 2" Choke @ 3625.

Treatment: 500 GA Mud Acid & 5000 GA Acid

Tbg. Pressure: 75#, Cgs. Pressure: 0#

Top of the Pay: 3651'

10 3/4" casing, set at 323 ' with NA sx of NA Cement

Hole size 15 ". TOC @ surface determined by calculations.

5 1/2" casing set at 3460 ' with NA sx of NA Cemer

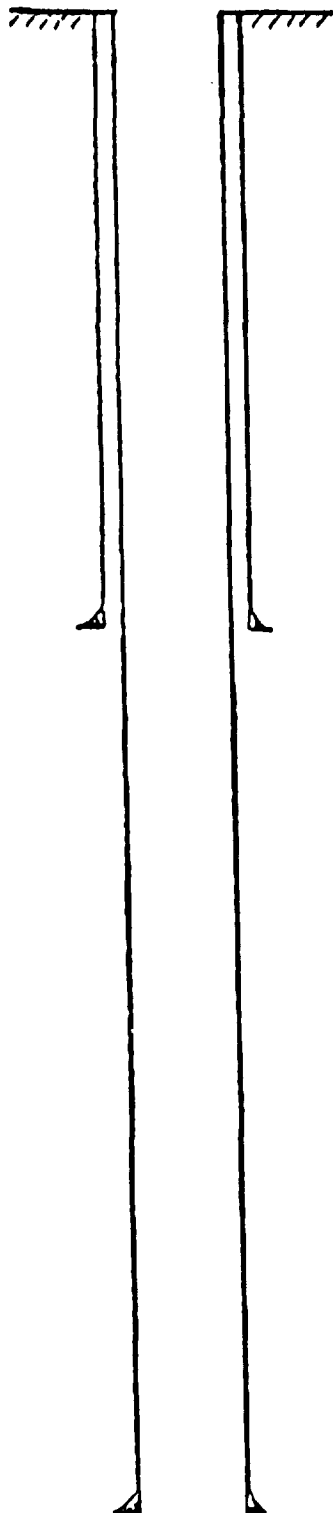
Total Depth 3719 ' Hole size 7 3/8 ". TOC @ surface determined by calculation.

TD. 3719'

|          |                                  |                                            |
|----------|----------------------------------|--------------------------------------------|
| OPERATOR | Zia Energy (Continental Oil Co.) | DATE                                       |
| CASE     | Elliot                           | 1-B-7 660' FNL & 1980' FEL Sec 7-T22S-R37E |

Lea Co., New Mexico  
Penrose Skelly Field

Schematic



Elev. 3446' Spud: 11-4-44 Comp. 12-14-44

IPF: 94 BO/24 hrs. on 17/64" choke  
DST: 3457-3587', open 1 hr. recovered 180' drlg.  
mud 7 450' salt water.  
DST: 3644-3723', open 2 hrs. 35 min. Flowed 3  
BOPH w/124000 CFG  
Top of the Pay: 3685'  
Treatment: 1000 gals of acid

7 5/8 " casing set at 1157 ' with 425 sx of NA Cement

Hole size 9 5/8 ". TOC @ surface determined by calculation.

6 3/4 " casing set at 3643 ' with 324 sx of NA Cement

Total Depth 3723 ' Hole size 7 3/8 ". TOC @ surface determined by calculation.

2" Tbg to 3750'

TD. 3723

|          |                        |                |                                                     |
|----------|------------------------|----------------|-----------------------------------------------------|
| OPERATOR | Texaco Inc.            |                | DATE                                                |
| LEASE    | C.P. Falby "A" Federal | WELL NO<br># 4 | LOCATION<br>1980' FNL & 660' FWL of Sec 8-T22S-R37E |

# Schematic

3429' DF.

Elev. 3429' DF. Spud: 5-19-61 Comp: 8-12-61

Prod Zone: (Penrose) T/pay 3473', perfs: 3473-3566'  
 Prod Zone: (Grayburg) T/pay 3672', perfs: 3672-3733'  
 Prod Zone: (Drinkard) T/pay 6455', perfs: 6455-6518'

Penrose IPP: 46 BOPD thru 17/64" ch  
 Grayburg IPP: 18 BOPD + 12 BOPD  
 Drinkard IPP: 71 BOPD thru 18/64" ch  
 Completion Info: A/1000 gals, & Frac w/10,000 gals,  
 Grayb. A/1000 gals & Frac w/20,000 gals, Drinkard  
 A/12,400 gals & Frac w/20,000 gals

10 3/4" casing set at 339' with 300' sx of NA cement

Hole size 12 3/8". TOC @ surface determined by calculations.

Updated Completion Info: no new potential; ret @ 3422',  
 sqzd w/300 sx & DOC; ret @ 3605'; sqzr w/250 sx; DOC 655'  
 perf; (Drkd) @ 6366, 6372, 6378, 6391, 6398, 6403, 6408,  
 6425, 6431, 6440, 6442, 6466' /2 SPI, A/500 gals

7 5/8" casing set at 3943' with 1200' sx of NA cement

Hole size 9 5/8". TOC @ surface determined by calculations.

4 1/2" casing set at 6554' with 200' sx of NA cement

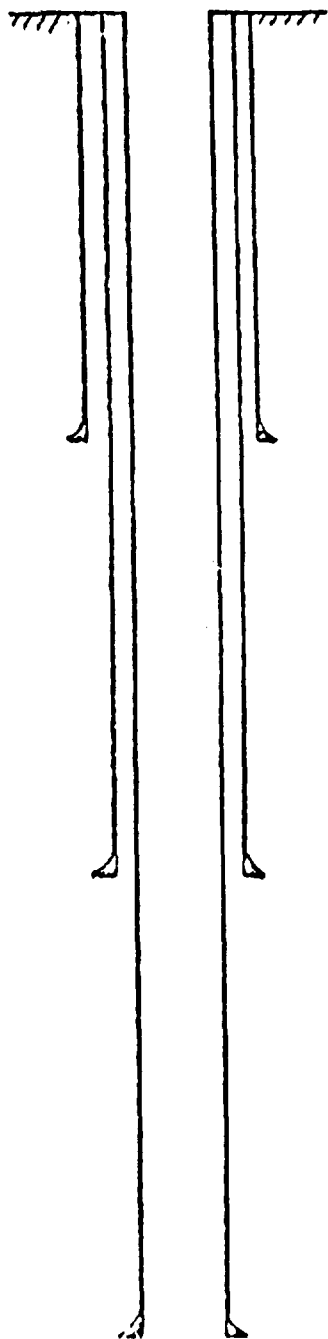
Hole size 6 3/4", 4 1/2" liner set @ 3883-6554' /200 sx, 2 3/8"  
 set @ 6450', TOC @ 4962' determined by calculations

OTD 6555'  
 PB 6550'

|          |        |               |                                                     |
|----------|--------|---------------|-----------------------------------------------------|
| OPERATOR | Texaco | (Texas Co.)   | DATE                                                |
| LEASE    | Falby  | WELL NO<br>#2 | LOCATION<br>660' FNL & 660' FWL' of Sec 8-T22S-R37E |

Lea Co., New Mexico  
Penrose Skelly Field

Schematic



3434'

Elev. 3434' Spud: 10-18-37 Comp: 1-8-38

IPF: 76 BF/24 hrs. on 24/64" choke  
Remarks: Fl. 150 BOPD -7 mil G thru csg, Est.  
60 BOPD fl. SC 3557'; 3567-72; SO 3694-3745'

Top of the Pay: 3584'

Shot: 450 qts., 3580-3760', 2000 gals Acid

13 " casing set at 194 ' with 200 sx of NA cement  
Hole size 15 ". TOC @ surface determined by calculation.

9 5/8 " casing set at 1180 ' with 600 sx of NA cement  
Hole size 12 1/4 ". TOC @ surface determined by calculations.

7 " casing set at 3500 ' with 300 sx of NA cement  
Hole size 8 7/8 ". TOC @ 1118', determined by calculations.

TD. 3760'

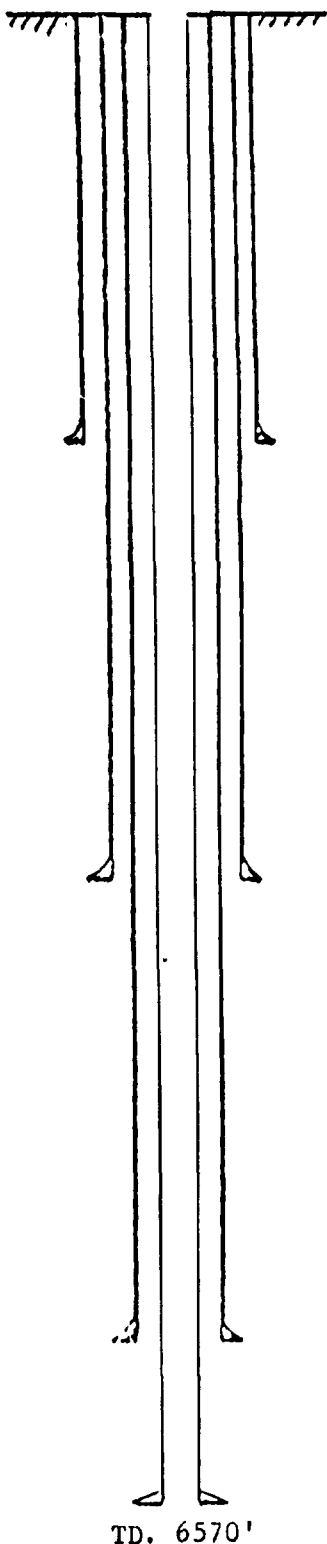


|           |        |                   |                                    |
|-----------|--------|-------------------|------------------------------------|
| OPERATOR  | Texaco | (Texas Co.)       | DATE                               |
| WELL NAME | Falby  | (C.P."A" Federal) | 660 FNL & 1980 FWL Sec 8-T22S-R37E |

API NO. MN 10117

Lea Co., New Mexico  
Blinebry Field

Schematic



3435 Grd.

Elev. 3435 Grd. Spud: 11-20-79 Comp: 12-11-79

PP: 36 BPOD + 17 BW, COR 167  
Comp Info: (Orig. Texas Co., Comp. 10-20-50) (DRKD)  
perfs 6470-6575, OTD 6570, OPB 6565', OWWO by Texaco  
Inc. & Recom. 6-23-75 (BLIN) PERFS 5508-5840, OTD  
6570, OPB 6000') Perf (DRKD) @ 6310-6450 w/2 SPI,  
A/2800 gals, DO to 6524, A/1500 gals, A/1500 gals,  
Down hole commingling of Drinkard & Blinebry perfs.  
Prod. Zone: (BLIN) T/Pay 5508', perfs 5508-6424'

12 1/2" casing set at 228 ' with 175 sx of NA cement  
Hole size 13 3/8". TOC @ surface determined by calculation.

9 5/8" casing set at 1192 ' with 600 sx of NA cement  
Hole size 12 1/4". TOC @ surface determined by calculation.

7 " casing set at 3550 ' with 300 sx of NA cement  
Hole size 8 5/8". TOC @ surface determined by calculation.

5 " casing set at 6570 ' with 300 sx

TD. 6570'

## CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: BEC CORPORATION Well: J.W. GRIZZELL 'A' No. 4  
Contact: D.T. MAXWELL Title: SUPER. Phone: 915-682-1828

DATE IN 10-14-97 RELEASE DATE 10-29-97 DATE OUT 12-12-97

Proposed Injection Application is for: WATERFLOOD Expansion Initial

Original Order: R- Secondary Recovery Pressure Maintenance

### SENSITIVE AREAS

X SALT WATER DISPOSAL Commercial Well

WIPP Capitan Reef

Data is complete for proposed well(s)? Additional Data Req'd

### AREA of REVIEW WELLS

20 Total # of AOR

# of Plugged Wells

4/5 Tabulation Complete

Schematics of P & A's

4/5 Cement Tops Adequate

AOR Repair Required

### INJECTION FORMATION

Injection Formation(s) GRAYBURG Compatible Analysis 4/5

Source of Water or Injectate AREA PRODUCTION

### PROOF of NOTICE

✓ Copy of Legal Notice

✓ Information Printed Correctly

✓ Correct Operators

✓ Copies of Certified Mail Receipts

ND Objection Received

Set to Hearing Date

### NOTES:

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? 4/5

### COMMUNICATION WITH CONTACT PERSON:

1st Contact: Telephoned Letter Date Nature of Discussion

2nd Contact: Telephoned Letter Date Nature of Discussion

3rd Contact: Telephoned Letter Date Nature of Discussion



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
HOBBS DISTRICT OFFICE

10/22/97

GOVERNOR

687  
POST OFFICE BOX 1980  
HOBBS, NEW MEXICO 88241-1980  
(505) 393-6161

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

RE: Proposed:

MC \_\_\_\_\_  
DHC \_\_\_\_\_  
NSL \_\_\_\_\_  
NSP \_\_\_\_\_  
SWD X \_\_\_\_\_  
WFX \_\_\_\_\_  
PMX \_\_\_\_\_

Gentlemen:

I have examined the application for the:

BEC Corp IW Grizzell A #4-M 5-22s-37e  
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

None - are there any freshwater wells in the half mile radius that  
could be affected by disposal of produced fluids

Yours very truly,

*Chris Williams*

Chris Williams  
Supervisor, District 1

/ed