

RELEASE 8.30.93

## Mayne & Mertz

P. O. Box 183, Midland, Texas 79702, (915) 683-1600

August 3, 1993

New Mexico Oil Conservation Division  
Attn: Mr. David Catanach  
P. O. Box 2088  
Santa Fe, NM 87584-2088

Re: Application for Exception to Rule 303-A  
Elliott Fields Lease, Well No. 1  
Unit U, Sec. 6, T-21-S, R-38-E  
Lea County, New Mexico

Gentlemen:

Mayne & Mertz, Inc. requests an exception to Rule 303-A to permit downhole commingling of the Blinebry, Drinkard and Wantz Abo pools within the subject well. Production from the Drinkard and Wantz Abo is currently being downhole commingled by authority received October 8, 1970 through Administrative Order No. DHC-70.

The Blinebry pool was recently completed in this well and is being selectively produced with a retrievable bridge plug between the zones. We believe this well remains qualified for downhole commingling under provisions of Rule 303-C with the addition of the Blinebry pool. The attached information provides support in this regard.

This lease is Federal Lease No. LC-065525. A copy of this application is being submitted to United States Bureau of Land Management. All offset operators have been notified in writing of this proposed commingling.

Very truly yours,



Taylor Mayne

TM/ev

Attach.

cc: U.S. Bureau of Land Management  
Attn: Mr. Adam Salameh  
P. O. Box 1778  
Carlsbad, NM 88221-1778

Offset Operators

OIL CONSERVATION DIVISION  
RECEIVED  
AUG 10 1993

**APPLICATION TO DOWNHOLE COMMINGLE  
BLINEBRY, DRINKARD and WANTZ ABO POOLS**

**ELLIOTT FIELDS No. 1**

**OPERATOR:** Mayne & Mertz, Inc.  
P. O. Box 183  
Midland, TX 79702

**LOCATION:** Unit U, Section 6, T-21-S, R-38-E  
Lea County, New Mexico

**DEPTH:** 7417' (lowermost perforation)

**ESTIMATED BOTTOMHOLE PRESSURES:**

|              |         |
|--------------|---------|
| Drinkard/Abo | 297 psi |
| Blinebry     | 340 psi |

**LIFT STATUS:** All zones must be rod pumped.

**ZONE CLASSIFICATIONS:** All zones are classified as "oil".

**FLUID COMPATIBILITY:** Combining the fluids will not result in the formation of precipitates which might damage any of the reservoirs (see attached compatibility report).

**OWNERSHIP:** Ownership of all zones is common.

|                   |                        |                       |   |              |
|-------------------|------------------------|-----------------------|---|--------------|
| <b>ECONOMICS:</b> | Blinebry only -        | (4BOPD)(\$16/BO)      | = | \$64.00      |
|                   |                        | (17MCFPD)(\$1.25/MCF) | = | <u>21.25</u> |
|                   |                        | Total Revenue         | = | \$83.25 /D   |
|                   | All Zones Commingled - | (8BOPD)(\$16/BO)      | = | \$128.00     |
|                   |                        | (25MCFPD)(\$1.25/MCF) | = | <u>31.25</u> |
|                   |                        | Total Revenue         | = | \$159.25 /D  |

| <b>PRODUCTION ALLOCATION:</b> | <u>BOPD</u> | <u>% of Total</u> | <u>Proposed Allocation</u> |                       |
|-------------------------------|-------------|-------------------|----------------------------|-----------------------|
| Drinkard                      | 1.2         | 15%               | 15%                        | <sup>CAS</sup><br>10% |
| Wantz Abo                     | 2.8         | 35%               | 35%                        | 22%                   |
| Blinebry                      | <u>4</u>    | <u>50%</u>        | <u>50%</u>                 | <u>68%</u>            |
| Total                         | 8           | 100%              | 100%                       | 100%                  |

Production from each zone is expected to have a similar decline rate.

# Story

D.M. U.S.A.  
McCosland

R318

Marshall  
E. Winston  
(Macpherson  
Emer., Jr  
et al, Del. 7915

(C. A. Schellinger)  
7.1.92

"McNeill"

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PL92  
Marshall E.  
Winston  
to 7879

Marshall  
E. Winston  
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**Elliott Oil,**

Dil, et al  
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2. Juliano

Mayne, Mertz  
065525

~~Elliott Fields~~

- Elliott Fields #1  
40 Acres

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S.  
(Duel)

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Cort Wall  
 Serv.  
 Inc. (P/B)  
 30473

Yates Pet. et al  
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7-135 200  
L S M.I.  
11/18/93

G. H.  
O'Brien  
HBP  
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JOSEF P. STOL  
7-135 200  
U.S. #1  
5010151

Shell  
HBP  
DSB011

1 votes  
Pet. et al  
9.1.93  
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Mara  
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HEP  
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U.S., MI.  
Will Terry, S

J H Hendrix

Gulf-Bunin  
N.B Bunin (S)

BC 6, 7 OH

Aztec Information  
Not Responsible for  
HES HED

Q457088

Submit 2 copies to Appropriate District Office.

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Form C-116  
Revised 1/1/89

### GAS - OIL RATIO TEST

| Operator                        |          | Pool                            |       | County      |              | Lea                                         |             |                  |                      |                   |              |           |                            |             |           |
|---------------------------------|----------|---------------------------------|-------|-------------|--------------|---------------------------------------------|-------------|------------------|----------------------|-------------------|--------------|-----------|----------------------------|-------------|-----------|
| Mayne & Mertz, Inc.             |          | Drinkard - Wantz Abo - Blinebry |       |             |              |                                             |             |                  |                      |                   |              |           |                            |             |           |
| Address                         |          | TYPE OF TEST - (X)              |       | Completion  |              | Special <input checked="" type="checkbox"/> |             |                  |                      |                   |              |           |                            |             |           |
| P. O. Box 183 Midland, TX 79702 |          |                                 |       |             |              |                                             |             |                  |                      |                   |              |           |                            |             |           |
| LEASE NAME                      | WELL NO. | LOCATION                        |       |             | DATE OF TEST | CHOKE SIZE                                  | TBG. PRESS. | DAILY ALLOW-ABLE | LENGTH OF TEST HOURS | PROD. DURING TEST |              |           | GAS - OIL RATIO CU.FT/BBL. |             |           |
|                                 |          | U                               | S     | T           |              |                                             |             |                  |                      | R                 | WATER BBL.S. | GRAV. OIL |                            | OIL BBL.S.  | GAS. MCF. |
| Drinkard Pool                   |          |                                 |       |             |              |                                             |             |                  |                      |                   |              |           |                            |             |           |
| Elliot Fields                   | 1        | U                               | 6     | 21-S        | 38-E         | 6/22/93                                     | P           | Open             | 25                   | 24                | 0.6          | 40.2      | 1.2                        | 2.41% 2000  |           |
| Wantz Abo Pool                  |          |                                 |       |             |              |                                             |             |                  |                      |                   |              |           |                            |             |           |
| Elliot Fields                   | 1        | U                               | 6     | 21S         | 38-E         | 6/22/93                                     | P           | Open             | 25                   | 24                | 1.4          | 40.2      | 2.8                        | 5.62% 2000  |           |
| Blinebry Pool                   |          |                                 |       |             |              |                                             |             |                  |                      |                   |              |           |                            |             |           |
| Elliot Fields                   | 1        | U                               | 6     | 21-S        | 38-E         | 7/21/93                                     | P           | Open             | 25                   | 24                | 7            | 39.5      | 4                          | 17.66% 4250 |           |
|                                 |          | *SPECIAL                        | TEST: | REQUEST FOR | DOWNHOLE     | COMINGLING                                  |             |                  |                      | TOTAL             | 9            |           | 8                          | 25          | 3125      |

#### Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

*Taylor Mayne*  
Signature  
Taylor Mayne  
President

Printed name and title

8/3/93

Date

(915) 683-1600

Telephone No.

SUMMARY COMPLETION REPORT - BLINEBRY FORMATION

ELLIOTT FIELDS NO. 1

---

6/30/93 PULLED RODS, PMP & TBG. RAN GR/CCL FROM 6400' TO 5900'. POOH. RIH W/ SELECT FIRE CSG GUN & PERFED BLINEBRY FORMATION W/ 2 SPF AS FOLLOWS: 6028', 6034', 6049', 6059', 6082', 6084', 6091', 6093', 6099', 6101', 6108', 6117', 6123', 6125', 6136', 6140', 6142', 6156', 6159', 6162', 6168', 6176', 6185', 6191', 6245', 6266', 6269', 6296', 6298', 6355', 6357' (62 SHOTS TOTAL).

7/02/93 RIH W/ BIT & CSG SCRAPER TO 6582'. POOH. PU RBP & PKR. RIH & SET RBP @ 6450'. TESTED RBP TO 2000 PSI (4884 PSI BHP). HELD OK. SPOTTED 650 GALS UNGELLED 20% NEFE HCL ACID OVER PERFS. PU & SET PKR @ 5931'. BROKE DWN PERFS @ 2000 PSI. ACID FRACED W/ TOTAL OF 1000 GALS UNGELLED & 7000 GALS GELLED 20% NEFE HCL. MTP 4500 PSI. ATP 3300 PSI. MPR 10.3 BPM. APR 7.5 BPM. ISIP, 5 MIN, 10 MIN & 15 MIN SIP'S ALL 1800 PSI. BLEED OFF PRESS. 275 BLTR. SION.

7/03/93 SITP 750 PSI. RU SWAB. 57 BBLS TOTAL FLUID SWABBED; APPROX 7 BO & 50 BLW. RD SWAB. REL PKR & POOH. RIH OPEN ENDED W/ COLLAR, SN, 15 JTS TBG (498.21'), TAC & 177 JTS TBG (5877.4'). TAGGED RBP @ 6450'. PU & SET SN @ 6390' (33' BELOW BOT PERF). SET TAC. RUN ROD PMP & RODS. PWOP. 465 BLTR.

7/04/93 PMPD 0 BO, 108 BLW IN 16.5 HRS. 357 BLTR.

7/05/93 PMPD 0 BO, 138 BLW. 219 BLTR.

7/06/93 PMPD 0 BO, 117 BLW. 102 BLTR.

7/07/93 PMPD 40 BO, 67 BLW. 35 BLTR.

7/08/93 PMPD 12 BO, 35 BLW & 11 BNW. 0 BLTR.

7/09/93 PMPD 7 BO, 12 BW, 17 MCF.

7/10/93 6 BO, 10 BW, 17 MCF.

7/11/93 6 BO, 6 BW, 17 MCF.

7/12/93 6 BO, 5 BW, 17 MCF. WELL DOWN 18 HRS DUE TO BAD WEATHER.

7/13/93 7 BO, 18 BW, 17 MCF.

7/14/93 4 BO, 7 BW, 17 MCF.

7/15/93 3 BO, 8 BW, 17 MCF. WELL DOWN DUE TO BAD WEATHER.

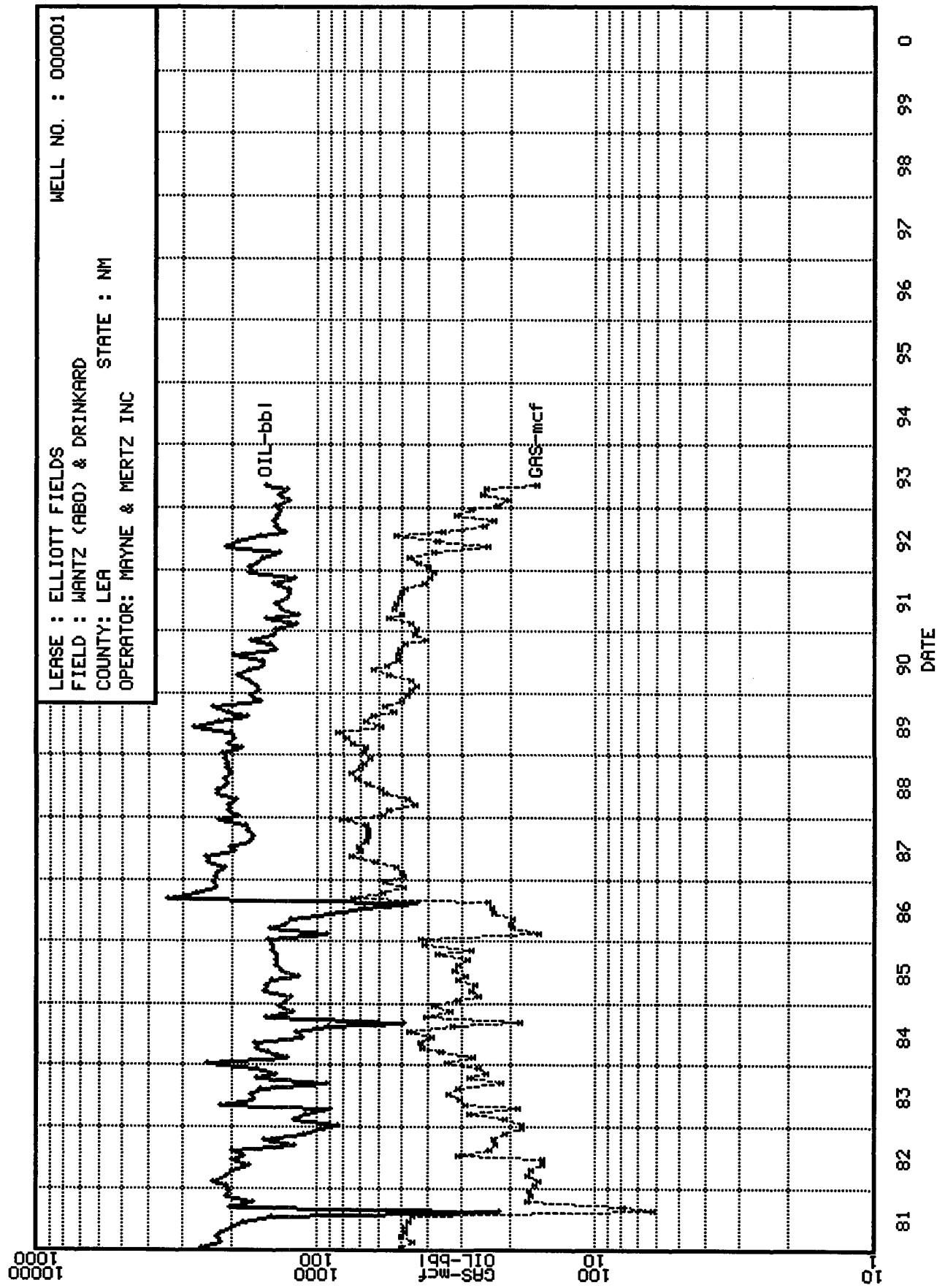
7/16/93 8 BO, 22 BW, 17 MCF.

7/17/93 7 BO, 10 BW, 17 MCF.

7/20/93 4 BO, 4 BW, 17 MCF.

7/21/93 4 BO, 7 BW, 17 MCF.





# TRETOLITE

16010 Barker's Point Lane, Suite 450  
Houston, Texas 77070 4021  
713 558-5200 • Fax: 713 589-4737

Reply to: P.O. Box 5250  
Hobbs, New Mexico 88241  
505 603 6711 Phone  
505 588-0700 Fax

## WATER ANALYSIS REPORT

Company : MAYNE & MANTX  
Address :  
Lease : ELLIOTT FIELD  
Well : #1 *Blinebry (new zone)*  
Sample Pt. : UNKNOWN

Date : 08-02-93  
Date Sampled : 07-23-93  
Analysis No. : 271

| ANALYSIS                              | mg/L       | * meq/L   |
|---------------------------------------|------------|-----------|
| 1. pH                                 | 6.2        |           |
| 2. H2S                                | NK         |           |
| 3. Specific Gravity                   | 1.115      |           |
| 4. Total Dissolved Solids             | 10,148.9   |           |
| 5. Suspended Solids                   | NK         |           |
| 6. Dissolved Oxygen                   | NR         |           |
| 7. Dissolved CO2                      | NR         |           |
| 8. Oil In Water                       |            |           |
| 9. Phenolphthalein Alkalinity (CaCO3) | 219.0      |           |
| 10. Methyl Orange Alkalinity (CaCO3)  | 267.2      | HCO3 4.4  |
| 11. Bicarbonate                       | 114831.7   | Cl 3333.6 |
| 12. Chloride                          | SO4 1400.0 | SO4 29.2  |
| 13. Sulfate                           | Ca 9547.1  | Ca 476.4  |
| 14. Calcium                           | Mg 3286.7  | Mg 270.4  |
| 15. Magnesium                         | Na 57942.8 | Na 2520.3 |
| 16. Sodium (calculated)               | Fe 65.5    |           |
| 17. Iron                              | Ba NR      |           |
| 18. Barium                            | Sr NR      |           |
| 19. Strontium                         |            |           |
| 20. Total Hardness (CaCO3)            | 37373.6    |           |

## PROBABLE MINERAL COMPOSITION

| *milli equivalents per Liter         | COMPOUND  | EQUIV WT | * meq/L | mg/L   |
|--------------------------------------|-----------|----------|---------|--------|
| 476 *Ca <----- *HCO3                 | Ca(HCO3)2 | 81.0     | 4.4     | 355    |
| /----->                              | CaSO4     | 68.1     | 29.2    | 1984   |
| 270 *Mg -----> *SO4                  | CaCl2     | 55.5     | 442.9   | 24575  |
| <-----/                              | Mg(HCO3)2 | 73.2     |         |        |
| 2520 *Na -----> *Cl                  | MgSO4     | 60.2     |         |        |
|                                      | MgCl2     | 47.6     | 270.4   | 12872  |
| Saturation Values Dist. Water @ 15°C | NaHCO3    | 84.0     |         |        |
| CaCO3 13 mg/L                        | Na2SO4    | 71.0     |         |        |
| CaSO4 * 2H2O 2090 mg/L               | NaCl      | 58.4     | 2520.3  | 147289 |
| NaSO4 2.4 mg/L                       |           |          |         |        |

REMARKS: KNOX SERVICES  
JERRY WHITE / FILE



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JERRY WHITE  
Sales Representative

Tretolite Division  
Petrolite Corporation  
Southeastern New Mexico District  
5624 Lovington Hwy.  
Hobbs, NM 88040 0140

Office (505) 382-6711  
Mobile (505) 389-7260  
Home (505) 382-6711

SCALE TENDENCY REPORT  
-----

Company : MAYNE & MANTX Date : 08-02-93  
Address : Date Sampled : 07-23-93  
Lease- : ELLIOTT FIELD Analysis No. : 671  
Well : #1 *Blinebry (new zone)* Analyst : ROZANNE JOHNSON  
Sample No. : UNKNOWN

STABILITY INDEX CALCULATIONS  
(Stiff-Davis Method)  
CaCO<sub>3</sub> Scaling-Tendency

|        |     |    |          |      |         |   |
|--------|-----|----|----------|------|---------|---|
| S.I. = | 0.4 | at | 60 deg.  | F or | 16 deg. | C |
| S.I. = | 0.5 | at | 80 deg.  | F or | 27 deg. | C |
| S.I. = | 0.5 | at | 100 deg. | F or | 38 deg. | C |
| S.I. = | 0.6 | at | 120 deg. | F or | 49 deg. | C |
| S.I. = | 0.6 | at | 140 deg. | F or | 60 deg. | C |

\*\*\*\*\*

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS:  
(Skillman-McDonald-Stiff Method)  
Calcium Sulfate

|     |      |    |          |      |         |   |
|-----|------|----|----------|------|---------|---|
| S = | 1670 | at | 60 deg.  | F or | 16 deg. | C |
| S = | 1848 | at | 80 deg.  | F or | 27 deg. | C |
| S = | 1962 | at | 100 deg. | F or | 38 deg. | C |
| S = | 2014 | at | 120 deg. | F or | 49 deg. | C |
| S = | 2050 | at | 140 deg. | F or | 60 deg. | C |

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
ROZANNE JOHNSON



# TRETOLITE



16010 Barker's Point Lane, Suite 450  
Houston, Texas 77079-4021  
713 558-5200 • Fax: 713 589-4737

Reply to: P.O. Box 5250  
Hobbs, New Mexico 88241  
505 382-8711 Phone  
505 392-3759 Fax

## WATER ANALYSIS REPORT

Company : MAYNE & MANTX Date : 08-02-93  
Address : Date Sampled : 07-23-93  
Lease : DILLON FIELD Analysis No. : 173  
Well : #2 Abo / Drinkard (old zones)  
Sample Pt. : UNKNOWN

| ANALYSIS                              |       | mg/L     |      | * meq/L |
|---------------------------------------|-------|----------|------|---------|
| 1. pH                                 | 6.7   |          |      |         |
| 2. H2S                                | NR    |          |      |         |
| 3. Specific Gravity                   | 1.115 |          |      |         |
| 4. Total Dissolved Solids             |       | 182688.9 |      |         |
| 5. Suspended Solids                   |       | NR       |      |         |
| 6. Dissolved Oxygen                   |       | NR       |      |         |
| 7. Dissolved CO2                      |       | NR       |      |         |
| 8. Oil In Water                       |       | NR       |      |         |
| 9. Phenolphthalein Alkalinity (CaCO3) |       |          |      |         |
| 10. Methyl Orange Alkalinity (CaCO3)  |       | 122.0    |      |         |
| 11. Bicarbonate                       | HCO3  | 148.8    | HCO3 | 2.4     |
| 12. Chloride                          | Cl    | 112887.2 | Cl   | 3184.4  |
| 13. Sulfate                           | SO4   | 700.0    | SO4  | 14.6    |
| 14. Calcium                           | Ca    | 10717.4  | Ca   | 534.8   |
| 15. Magnesium                         | Mg    | 3452.0   | Mg   | 284.0   |
| 16. Sodium (calculated)               | Na    | 54776.5  | Na   | 2382.6  |
| 17. Iron                              | Fe    | 7.0      |      |         |
| 18. Barium                            | Ba    | NR       |      |         |
| 19. Strontium                         | Sr    | NR       |      |         |
| 20. Total Hardness (CaCO3)            |       | 40976.8  |      |         |

## PROBABLE MINERAL COMPOSITION

| milli equivalents per Liter        |            |           |      | Compound  | Equiv wt X meq/L = mg/L |        |        |
|------------------------------------|------------|-----------|------|-----------|-------------------------|--------|--------|
| 535                                | *Ca <----- | *HCO3     | 2    | Ca(HCO3)2 | 81.0                    | 2.4    | 198    |
|                                    | /----->    |           |      | CaSO4     | 68.1                    | 14.6   | 992    |
| 284                                | *Mg <----- | *SO4      | 15   | CaCl2     | 55.5                    | 517.8  | 28732  |
|                                    | <-----/    |           |      | Mg(HCO3)2 | 73.2                    |        |        |
| 2383                               | *Na <----- | *Cl       | 3184 | MgSO4     | 60.2                    |        |        |
|                                    |            |           |      | MgCl2     | 47.6                    | 284.0  | 13520  |
| Saturation Values Dist. Water 20 C |            |           |      | NaHCO3    | 84.0                    |        |        |
| CaCO3                              |            | 13 mg/L   |      | Na2SO4    | 71.0                    |        |        |
| CaSO4 * 2H2O                       |            | 2090 mg/L |      | NaCl      | 58.4                    | 2382.6 | 135240 |
| BaSO4                              |            | 2.4 mg/L  |      |           |                         |        |        |

REMARKS: KNOX SERVICES  
JERRY WHITE / FILE



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# SCALE TENDENCY REPORT

Company : MAYNE & MANTX Date : 08-02-93  
Address : Date Sampled : 07-23-93  
Lease : ELLIOTT FIELD Analysis No. : 672  
Well : #2 *Abo / Drinkard* Analyst : ROZANNE JOHNSON  
Sample Pt. : UNKNOWN *(old zones)*

## STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO3 Scaling Tendency

S.I. = 0.7 at 60 deg. F or 16 deg. C  
S.I. = 0.7 at 80 deg. F or 27 deg. C  
S.I. = 0.7 at 100 deg. F or 38 deg. C  
S.I. = 0.8 at 120 deg. F or 49 deg. C  
S.I. = 0.8 at 140 deg. F or 60 deg. C

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## CALCIUM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method) Calcium Sulfate

S = 1457 at 60 deg. F or 16 deg C  
S = 1615 at 80 deg. F or 27 deg C  
S = 1716 at 100 deg. F or 38 deg C  
S = 1762 at 120 deg. F or 49 deg C  
S = 1794 at 140 deg. F or 60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
ROZANNE JOHNSON

# TRETOLITE

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Reply to: P.O. Box 5250  
Hobbs, New Mexico 88241  
505 392-6711 Phone  
505 392-3759 Fax

## WATER ANALYSIS REPORT

Company : MAYNE & MANTZ Date : 08-02-93  
Address : Date Sampled : 07-23-93  
Lease : ELLIOTT FIELD COMPAT Analysis No. : 673  
Well : 50% #1 50% #2  
Sample Pt. : LABMIX *Abc, Drinkard & Blinbry mixed*

| ANALYSIS |                                    | mg/L        | * meq/L   |
|----------|------------------------------------|-------------|-----------|
| -----    |                                    | ----        | -----     |
| 1.       | pH                                 | 6.4         |           |
| 2.       | H2S                                | NR          |           |
| 3.       | Specific Gravity                   | 1.115       |           |
| 4.       | Total Dissolved Solids             | 184916.0    |           |
| 5.       | Suspended Solids                   | NR          |           |
| 6.       | Dissolved Oxygen                   | NR          |           |
| 7.       | Dissolved CO2                      | NR          |           |
| 8.       | Oil In Water                       | NR          |           |
| 9.       | Phenolphthalein Alkalinity (CaCO3) |             |           |
| 10.      | Methyl Orange Alkalinity (CaCO3)   | 171.0       |           |
| 11.      | Bicarbonate                        | HCO3 208.6  | HCO3 3.4  |
| 12.      | Chloride                           | Cl 113759.4 | Cl 3209.0 |
| 13.      | Sulfate                            | SO4 1050.0  | SO4 21.9  |
| 14.      | Calcium                            | Ca 10132.2  | Ca 505.6  |
| 15.      | Magnesium                          | Mg 3369.4   | Mg 277.2  |
| 16.      | Sodium (calculated)                | Na 56359.9  | Na 2451.5 |
| 17.      | Iron                               | Fe 36.5     |           |
| 18.      | Barium                             | Ba NR       |           |
| 19.      | Strontium                          | Sr NR       |           |
| 20.      | Total Hardness (CaCO3)             | 39175.2     |           |

## PROBABLE MINERAL COMPOSITION

| *milli equivalents per Liter       | Compound   | Equiv wt | X meq/L | = mg/L |
|------------------------------------|------------|----------|---------|--------|
| -----                              | -----      | -----    | -----   | -----  |
| 506 *Ca <----- *HCO3               | Ca (HCO3)2 | 81.0     | 3.4     | 277    |
| ----- /----->                      | CaSO4      | 68.1     | 21.9    | 1488   |
| 277 *Mg -----> *SO4                | CaCl2      | 55.5     | 480.3   | 26653  |
| ----- <----- /                     | Mg (HCO3)2 | 73.2     |         |        |
| 2451 *Na -----> *Cl                | MgSO4      | 60.2     |         |        |
| -----                              | MgCl2      | 47.6     | 277.2   | 13196  |
| Saturation Values Dist. Water 20 C | NaHCO3     | 84.0     |         |        |
| CaCO3 13 mg/L                      | Na2SO4     | 71.0     |         |        |
| CaSO4 * 2H2O 2090 mg/L             | NaCl       | 58.4     | 2451.5  | 143265 |
| BaSO4 2.4 mg/L                     |            |          |         |        |

REMARKS: KNOX SERVICES  
----- JERRY WHITE / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
ROZANNE JOHNSON

PETROLITE

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**SCALE TENDENCY REPORT**  
-----

|            |                        |              |                   |
|------------|------------------------|--------------|-------------------|
| Company    | : MAYNE & MANTZ        | Date         | : 08-02-93        |
| Address    | :                      | Date Sampled | : 07-23-93        |
| Lease      | : ELLIOTT FIELD COMPAT | Analysis No. | : 673             |
| Well       | : 50% #1      50% #2   | Analyst      | : ROZANNE JOHNSON |
| Sample Pt. | : LABMIX               |              |                   |

*Abo, Drinkard & Blinebry mixed***STABILITY INDEX CALCULATIONS**  
(Stiff-Davis Method)  
CaCO<sub>3</sub> Scaling Tendency

|        |     |    |            |    |           |
|--------|-----|----|------------|----|-----------|
| S.I. = | 0.6 | at | 60 deg. F  | or | 16 deg. C |
| S.I. = | 0.6 | at | 80 deg. F  | or | 27 deg. C |
| S.I. = | 0.6 | at | 100 deg. F | or | 38 deg. C |
| S.I. = | 0.7 | at | 120 deg. F | or | 49 deg. C |
| S.I. = | 0.7 | at | 140 deg. F | or | 60 deg. C |

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**CALCIUM SULFATE SCALING TENDENCY CALCULATIONS**  
(Skillman-McDonald-Stiff Method)  
Calcium Sulfate

|     |      |    |            |    |          |
|-----|------|----|------------|----|----------|
| S = | 1556 | at | 60 deg. F  | or | 16 deg C |
| S = | 1723 | at | 80 deg. F  | or | 27 deg C |
| S = | 1831 | at | 100 deg. F | or | 38 deg C |
| S = | 1880 | at | 120 deg. F | or | 49 deg C |
| S = | 1914 | at | 140 deg. F | or | 60 deg C |

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
ROZANNE JOHNSON

## **OFFSET OPERTORS**

### **Elliott Fields Lease**

Carr Well Service  
P. O. Box 69090  
Odessa, TX 79767  
(915) 362-4324

Conoco Inc.  
Petroleum Center Bldg., Ste. 115  
501 Airport Drive  
Farmington, NM 87401-2967

Marshall & Winston Inc.  
P. O. Box 50880  
Midland, TX 79710-0880  
(915) 684-6373

Exxon Co., U.S.A.  
P. O. Box 1600  
Midland, TX 79702  
(915) 688-6100

Pete Mills  
P. O. Box 755  
Hobbs, NM 88240

Elliott Oil Company  
P. O. Box 1355  
Roswell, NM 88202  
(505) 622-5840