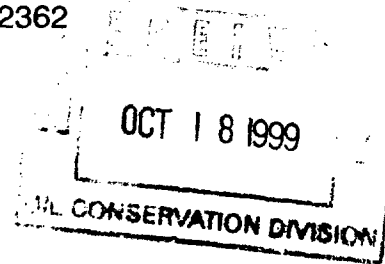


# MACK ENERGY CORPORATION

Post Office Box 960  
Artesia, New Mexico 88211-0960  
(505) 748-1288 / FAX (505) 746-2362

October 14, 1999



*Oil Conservation Division  
Attn: Mark Ashely  
2040 South Pacheco Street  
Santa Fe, NM 87505*

*Dear Mr. Ashely:*

*Per Robert Chase, enclosed you will find the requested Water Analysis Report for our Big George Disposal Tank.*

*If we can be of any further assistance, please feel free to call.*

*Sincerely,*

*MACK ENERGY CORPORATION*

*Crissa D. Carter  
Production Analyst*

*CDC/*

*Enclosure*

# Enviro-Chem, Inc.

## WATER ANALYSIS REPORT

### SAMPLE

Oil Co. : Mack Energy  
 Lease : Big George  
 Well No.: Disposal Tank  
 Lab No. :

Sample Loc. :  
 Date Analyzed: 20-May-1998  
 Date Sampled :

### ANALYSIS

- |                                               |                 |
|-----------------------------------------------|-----------------|
| 1. pH                                         | 6.910           |
| 2. Specific Gravity 60/60 F.                  | 1.138           |
| 3. CaCO <sub>3</sub> Saturation Index @ 80 F. | +1.131          |
|                                               | @ 140 F. +2.231 |

#### Dissolved Gasses

|                     | MG/L           | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Present        |         |        |
| 5. Carbon Dioxide   | Not Determined |         |        |
| 6. Dissolved Oxygen | Not Determined |         |        |

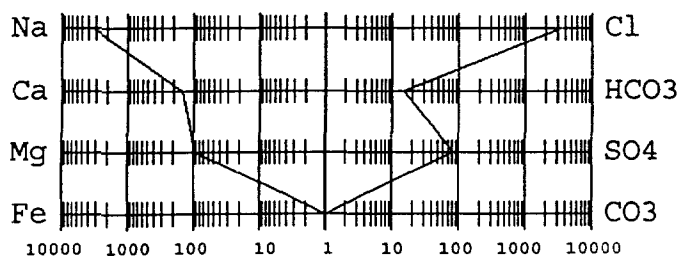
#### Cations

|                                  |                     |          |          |
|----------------------------------|---------------------|----------|----------|
| 7. Calcium (Ca <sup>++</sup> )   | 2,814               | / 20.1 = | 140.00   |
| 8. Magnesium (Mg <sup>++</sup> ) | 1,138               | / 12.2 = | 93.28    |
| 9. Sodium (Na <sup>+</sup> )     | (Calculated) 72,661 | / 23.0 = | 3,159.17 |
| 10. Barium (Ba <sup>++</sup> )   | Not Determined      |          |          |

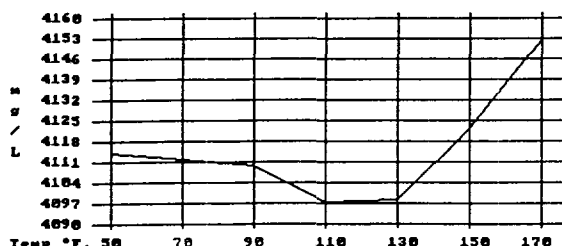
#### Anions

|                                                  |            |          |          |
|--------------------------------------------------|------------|----------|----------|
| 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> ) | 854        | / 61.1 = | 13.98    |
| 14. Sulfate (SO <sub>4</sub> <sup>=</sup> )      | 3,900      | / 48.8 = | 79.92    |
| 15. Chloride (Cl <sup>-</sup> )                  | 116,974    | / 35.5 = | 3,295.04 |
| 16. Total Dissolved Solids                       | 198,341    |          |          |
| 17. Total Iron (Fe)                              | 18         | / 18.2 = | 0.96     |
| 18. Total Hardness As CaCO <sub>3</sub>          | 11,710     |          |          |
| 19. Resistivity @ 75 F. (Calculated)             | 0.002 /cm. |          |          |

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



#### Calcium Sulfate Solubility Profile



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

|                                     |       |          |         |
|-------------------------------------|-------|----------|---------|
| Ca (HCO <sub>3</sub> ) <sub>2</sub> | 81.04 | 13.98    | 1,133   |
| CaSO <sub>4</sub>                   | 68.07 | 79.92    | 5,440   |
| CaCl <sub>2</sub>                   | 55.50 | 46.10    | 2,559   |
| 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 | 93.28    | 4,442   |
| NaHCO <sub>3</sub>                  | 84.00 | 0.00     | 0       |
| NaSO <sub>4</sub>                   | 71.03 | 0.00     | 0       |
| NaCl                                | 58.46 | 3,155.66 | 184,480 |

#### \*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis.  
 The corrosivity is increased by the content of mineral salts, and the presence of H<sub>2</sub>S in solution.

LAW OFFICES

# LOSEE, CARSON, HAAS & CARROLL, P. A.

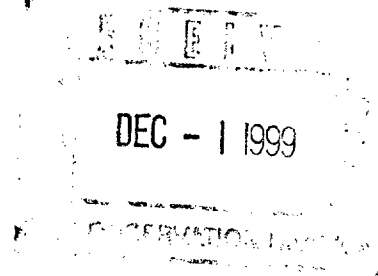
ERNEST L. CARROLL  
JOEL M. CARSON  
JAMES E. HAAS  
R. TRACY SPROULS, LL.M. (TAX)  
OF COUNSEL  
A. J. LOSEE

311 WEST QUAY AVENUE  
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ROSWELL OFFICE  
400 N. PENN., SUITE 870  
ROSWELL, NM 88201  
PHONE (505) 623-5154

PLEASE DIRECT ALL CORRESPONDENCE  
TO OUR ARTESIA OFFICE

November 30, 1999



Mr. David Catanach, Examiner  
New Mexico Oil Conservation Division  
2040 S. Pacheco  
P. O. Box 6429  
Santa Fe, New Mexico 87505-5472

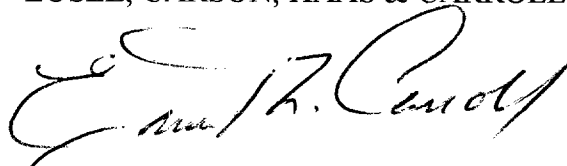
Re: Mack Energy Corporation  
Application for Authorization to Inject  
Aid State 14 #1 Well

Dear Mr. Catanach:

Enclosed please find the Certificate of Mailing and Compliance With Rule 1207 to be considered with the above referenced application for authorization to inject. If you have any questions regarding the certificate of the application please call me at the number listed above. If I can provide you with anything further, please advise.

Very truly yours,

LOSEE, CARSON, HAAS & CARROLL, P.A.

  
Ernest L. Carroll

ELC:sj  
Encl.

cc w/encl: Mr. Ron Lanning, Mack Energy Corp.