

## HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

LOVINGTON, NEW MEXICO 88260

## LABORATORY WATER ANALYSIS

No. W76-853To Marathon Oil CompanyDate 12-29-76Box 2406Hobbs, New Mexico

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Submitted by \_\_\_\_\_ Date Rec. 12-29-76Well No. Arnquist Est. #2 Depth \_\_\_\_\_ Formation Yeso

County \_\_\_\_\_ Field \_\_\_\_\_ Source \_\_\_\_\_

12-22-7612-23-76Resistivity ..... 0.050 @ 74° F. 0.050 @ 74° F.Specific Gravity ..... 1.121 1.120pH ..... 6.6 6.9Calcium (Ca) ..... 6,000 6,200 \*MPLMagnesium (Mg) ..... 300 240Chlorides (Cl) ..... 111,500 111,000Sulfates (SO<sub>4</sub>) ..... 2,300 2,350Bicarbonates (HCO<sub>3</sub>) ..... 500 510Soluble Iron (Fe) ..... Nil Nil

Remarks:

\*Milligrams per liter

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. 8

Submitted by:

**LEGACY RESERVES OPERATING LP**Hearing Date: April 26, 2012

Respectfully submitted,

Analyst: Brewer

cc:

HALLIBURTON COMPANY

By W. L. Brewer

CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.



# Water Analysis

Date: 2/24/2005

2401 Sivley, Artesia NM 88210

Phone (505) 746-3140 Fax (505) 746-2293

## Analyzed For

Company	Well Name	County	State
Westall	State G#1	Eddy	New Mexico

## Sample Source

Sample # 1

## Formation

Canyon

## Depth

Specific Gravity	1.050	SG @ 60 °F	1.051
pH	6.30	Sulfides	Not Tested
Temperature (°F)	65	Reducing Agents	Not Tested

## Cations

Sodium (Calc)	in Mg/L	9,518	in PPM	9,056
Calcium	in Mg/L	5,600	in PPM	5,328
Magnesium	in Mg/L	240	in PPM	228
Soluble Iron (FE2)	in Mg/L	300.0	in PPM	285

## Anions

Chlorides	in Mg/L	24,000	in PPM	22,835
Sulfates	in Mg/L	2,000	in PPM	1,903
Bicarbonates	in Mg/L	185	in PPM	176
Total Hardness (as CaCO3)	in Mg/L	15,000	in PPM	14,272
Total Dissolved Solids (Calc)	in Mg/L	41,844	in PPM	39,813
Equivalent NaCl Concentration	in Mg/L	38,410	in PPM	36,546

## Scaling Tendencies

\*Calcium Carbonate Index

1,038,464

Below 500,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable

\*Calcium Sulfate (Gyp) Index

11,200,000

Below 500,000 Remote / 500,000 - 10,000,000 Possible / Above 10,000,000 Probable

\*This Calculation is only an approximation and is only valid before treatment of a well or several weeks after treatment.

Remarks FAX 677-2361