

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840 OIL CONSERVATION DIVISION
FARMINGTON, NEW MEXICO 87499 RECEIVED

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May 21, 1991

Mr. David Catanach
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Order No. R-7308
Salt Water Disposal Permit
Santa Fe 20-2
2150' FNL, 1980' FWL
Sec. 20, T21N, R8W
San Juan County, NM

Core 7877

Dear Mr. Catanach:

Merrion Oil & Gas is currently disposing of produced Entrada water into the subject well. We have recently made discoveries in the Gallup and Dakota formations in the area. We request administrative approval to also inject the water produced from those two formations into the Santa Fe 20-2.

The new production wells are listed below:

<u>Well</u>	<u>Location</u>	<u>Lease</u>	<u>Formation</u>	<u>Water Rate BPD</u>
Santa Fe 20-4	Sec 20, 21N, 8W	Fee	Dakota	1000
Snake Eyes #2	Sec 20, 21N, 8W	Fee	Dakota	500
Santa Fe 20-5	Sec 20, 21N, 8W	Fee	Gallup	100

Attached are water analyses from the Dakota, Gallup, and the Entrada injection water for your review. If additional information is required, please contact me at 505-327-9801.

Sincerely,



George F. Sharpe
Engineer

cc: J. Greg Merrion
Steven S. Dunn
Well Files
NMOCD - Aztec

ANALYSIS NO. 53-35-90

FIELD RECEIPT NO. _____

AP FORM 45-1

API WATER ANALYSIS REPORT FORM

Company <u>Merrion Oil & Gas</u>		Sample No.	Date Sampled <u>8-30-90</u>	
Field	Legal Description	County or Parish		State
Lease or Unit	Well <u>Santa Fe 20-3</u>	Depth	Formation <u>Entrada</u>	Water. B/D
Type of Water (Produced, Supply, etc.)		Sampling Point		Sampled By

DISSOLVED SOLIDS

IONS	mg/l	me/l
Sodium, Na (calc.)	<u>4630</u>	<u>201.31</u>
Calcium, Ca	<u>62</u>	<u>3.10</u>
Magnesium, Mg	<u>13</u>	<u>1.10</u>
Barium, Ba		
Potassium, K ⁺	<u>11</u>	<u>.28</u>

ANIONS

	mg/l	me/l
Chloride, Cl	<u>2009</u>	<u>56.66</u>
Sulfate, SO ₄	<u>6212</u>	<u>129.33</u>
Carbonate, CO ₃	<u>29</u>	<u>.96</u>
Bicarbonate, HCO ₃	<u>1149</u>	<u>18.84</u>
OH	<u>0</u>	<u>0</u>

Total Dissolved Solids (calc.) 14,115
 Iron, Fe (total) 0.0 ppm
 Solids, as H₂S POS.

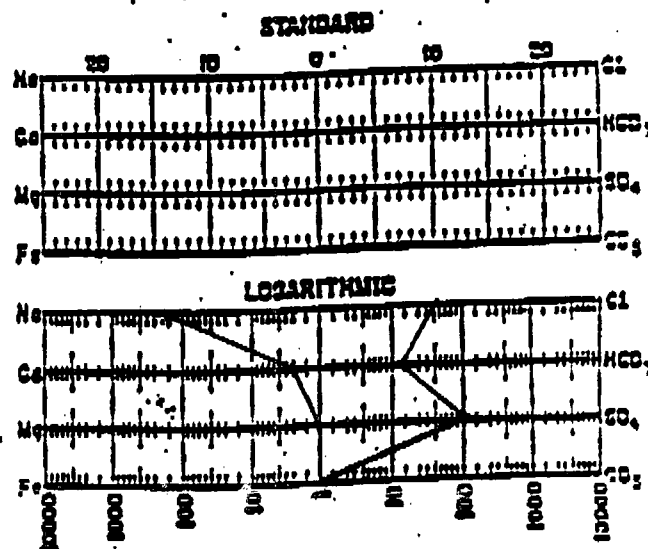
REMARKS & RECOMMENDATIONS:

Rick Dean

OTHER PROPERTIES

pH	<u>8.46</u>
Specific Gravity, 60/60 F.	<u>1.010</u>
Resistivity (ohm-meters) <u>76 F.</u>	<u>.93</u>
Total hardness	<u>210</u>

WATER PATTERNS—me/l

ANALYST: Lee
 THE WESTERN COMPANY OF
 NORTH AMERICA, FARMINGTON, N.M.
 (505) 327-6222

 Please refer any questions to: **BRIAN AULT** District Engineer

API WATER ANALYSIS REPORT FORM

Company <u>Morrison Oil & Gas</u>		Sample No.	Date Sampled <u>08-30-90</u>
Field	Legal Description	County or Parish	State
Lease or Unit	Well <u>Santa Fe 20-4</u>	Depth	Formation <u>Dakota</u>
Type of Water (Produced, Supply, etc.)		Sampling Point	Sampled By

DISSOLVED SOLIDS

IONS	mg/l	meq/l
Sodium, Na (calc)	<u>1351</u>	<u>58.75</u>
Calcium, Ca	<u>9</u>	<u>.44</u>
Magnesium, Mg	<u>3</u>	<u>.26</u>
Barium, Ba		
Potassium, K ⁺	<u>6</u>	<u>.15</u>

ANIONS	mg/l	meq/l
Chloride, Cl	<u>964</u>	<u>27.20</u>
Sulfate, SO ₄	<u>0</u>	<u>0</u>
Carbonate, CO ₃	<u>24</u>	<u>.80</u>
Bicarbonate, HCO ₃	<u>1928</u>	<u>31.60</u>
OH	<u>0</u>	<u>0</u>

Total Dissolved Solids (calc) 4285
 Iron, Fe (total) #, ## 0.0 ppm
 Solids, as H₂S neg

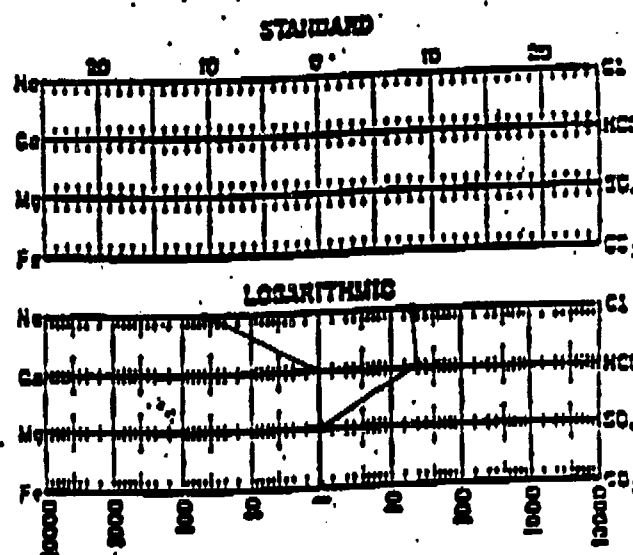
REMARKS & RECOMMENDATIONS:

Rick Dean

OTHER PROPERTIES

pH	<u>8.22</u>
Specific Gravity, 60/60 F.	<u>1.002</u>
Resistivity (ohm-meters) <u>77 F.</u>	<u>2.2</u>
Total hardness	<u>35</u>

WATER PATTERNS — meq/l

ANALYST: Lee
 THE WESTERN COMPANY OF
 NORTH AMERICA, FARMINGTON, N.
 (505) 327-6222

1. To refer any questions to: BRIAN AULT District Engineer

ANALYSIS NO. 51-14-91

API FORM 25-1

FIELD RECEIPT NO. _____

API WATER ANALYSIS REPORT FORM

1-28-91

Company <u>Merrion Oil & Gas</u>		Sample No.	Date Sampled
Field	Legal Description <u>520 T2N R8W</u>	County or Parish <u>San Juan</u>	State <u>NM</u>
Lease or Unit <u>Snake Eyes</u>	Well <u>#2</u>	Depth <u>4580'-84'</u>	Formation <u>Dakota Perfs.</u>
Type of Water (Produced, Supply, etc.) <u>Produced</u>	Sampling Point	Sampled By	

DISSOLVED SOLIDS

CATIONS

	mg/l	mg/l
Sodium, Na (calc.)	<u>3801</u>	<u>165.28</u>
Calcium, Ca	<u>52</u>	<u>2.60</u>
Magnesium, Mg	<u>10</u>	<u>.80</u>
Barium, Ba	<u>—</u>	<u>—</u>
Potassium, K ⁺	<u>11</u>	<u>.28</u>

ANIONS

Chloride, Cl	<u>587</u>	<u>16.57</u>
Sulfate, SO ₄	<u>6161</u>	<u>128.27</u>
Carbonate, CO ₃	<u>24</u>	<u>.80</u>
Bicarbonate, HCO ₃	<u>1423</u>	<u>23.32</u>
OH	<u>0</u>	<u>0</u>

Total Dissolved Solids (calc.)

12,069

Iron, Fe (total) #, ppb

0.0 ppmSulfide, as H₂Sneg

OTHER PROPERTIES

pH

8.32

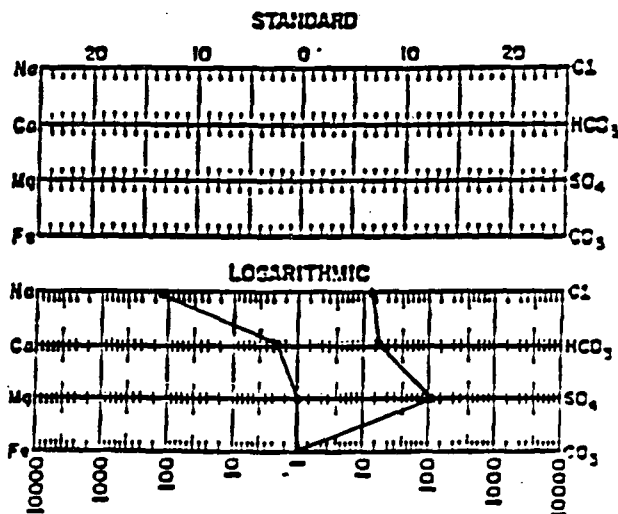
Specific Gravity, 60/60 F.

1.005Resistivity (ohm-meters) 70 F.1.6

Total hardness

170

WATER PATTERNS — mg/l



REMARKS & RECOMMENDATIONS:

ANALYST: _____

THE WESTERN COMPANY OF
NORTH AMERICA, FARMINGTON, NM
(505) 327-6222

Please refer any questions to: BRIAN AULT, District Engineer

ANALYSIS NO. 52-50-91

FIELD RECEIPT NO. _____

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company <u>Merrion Oil & Gas</u>		Sample No.		Date Sampled <u>05-17-91</u>					
Field		Legal Description		County or Parish		State			
Lease or Unit <u>Santa Fe</u>		Well <u>20-5</u>		Depth		Formation		Water, B/D	
Type of Water (Produced, Supply, etc.)				Sampling Point				Sampled By	

DISSOLVED SOLIDS

CATIONS

	mg/l	me/l
Sodium, Na (calc.)	<u>9877</u>	<u>429.45</u>
Calcium, Ca	<u>261</u>	<u>13.00</u>
Magnesium, Mg	<u>97</u>	<u>8.00</u>
Barium, Ba	<u>—</u>	<u>—</u>
Potassium, K	<u>130</u>	<u>3.32</u>

ANIONS

Chloride, Cl	<u>14984</u>	<u>422.69</u>
Sulfate, SO ₄	<u>212</u>	<u>4.41</u>
Carbonate, CO ₃	<u>0</u>	<u>0</u>
Bicarbonate, HCO ₃	<u>1627</u>	<u>26.67</u>
Hydroxide, OH	<u>0</u>	<u>0</u>

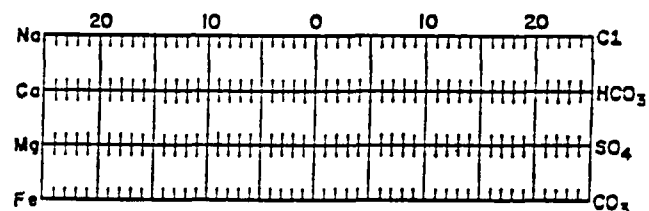
Total Dissolved Solids (calc.) 27188Iron, Fe (total) 11 ppmSulfide, as H₂S neg

OTHER PROPERTIES

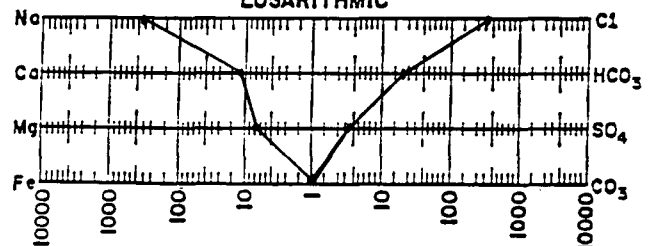
pH	<u>7.43</u>
Specific Gravity, 60/60 F.	<u>1.017</u>
Resistivity (ohm-meters) <u>74 F.</u>	<u>.26</u>
Total Hardness	<u>1050</u>

WATER PATTERNS — me/l

STANDARD



LOGARITHMIC



REMARKS & RECOMMENDATIONS:

0 API oil in water sample:
36° API @ 60°F

ANALYST: Lee

PLEASE REFER ANY QUESTIONS TO:

THE WESTERN CO. OF NORTH AMERICA
FARMINGTON, N.M.
BRIAN AULT-District Engineer
1(505) 327-6222