

WATER ANALYSIS REPORT

Company : YATES PETROLEUM Date : 10/19/95
Address : ARTESIA, NM Date Sampled : 10/18/95
Lease : SAFFRON Analysis No. : 021
Well : BATTERY
Sample Pt. : TANK 2-23s-32e

ANALYSIS		mg/L		* meq/L
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1. pH	5.8			
2. H2S	0 PPM			
3. Specific Gravity	1.175			
4. Total Dissolved Solids		269133.8		
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)				
11. Bicarbonate	HCO3	36.0	HCO3	0.6
12. Chloride	Cl	166992.0	Cl	4710.6
13. Sulfate	SO4	0.0	SO4	0.0
14. Calcium	Ca	18400.0	Ca	918.2
15. Magnesium	Mg	3922.7	Mg	322.7
16. Sodium (calculated)	Na	79783.2	Na	3470.3
17. Iron	Fe	NR		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		62100.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt	X meq/L	= mg/L

918 *Ca <-----	*HCO3	1	Ca(HCO3)2	81.0	0.6 48
-----	/----->	-----	CaSO4	68.1	
323 *Mg ----->	*SO4	0	CaCl2	55.5	917.6 50916
-----	<-----/	-----	Mg(HCO3)2	73.2	
3470 *Na ----->	*Cl	4711	MgSO4	60.2	
-----		-----	MgCl2	47.6	322.7 15363
Saturation Values Dist. Water 20 C			NaHCO3	84.0	
CaCO3	13 mg/L		Na2SO4	71.0	
CaSO4 * 2H2O	2090 mg/L		NaCl	58.4	3470.3 202807
BaSO4	2.4 mg/L				

REMARKS:

----- ANDY MILLER

Petrolite Oilfield Chemicals Group

Respectfully submitted,
SHAWNA MATTHEWS