

WATER ANALYSIS REPORT

Company : SANTA FE
 Address : ARTESIA, NM
 Lease : 17-4
 Well : BATTERY
 Sample Pt. : TANK

Date : 10/19/95
 Date Sampled : 10/18/95
 Analysis No. : 018

17-23s-3/e

ANALYSIS		mg/L		* meq/L
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1. pH	5.5			
2. H2S	0 PPM			
3. Specific Gravity	1.200			
4. Total Dissolved Solids		282297.4		
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	12.2	HCO3	0.2
12. Chloride	Cl	175938.0	Cl	4963.0
13. Sulfate	SO4	75.0	SO4	1.6
14. Calcium	Ca	24080.0	Ca	1201.6
15. Magnesium	Mg	4849.4	Mg	399.0
16. Sodium (calculated)	Na	77342.8	Na	3364.2
17. Iron	Fe	NR		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		80100.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt X meq/L	=	mg/L
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1202 *Ca <----- *HCO3	0	Ca(HCO3)2	81.0	0.2	16
/----->		CaSO4	68.1	1.6	106
399 *Mg -----> *SO4	2	CaCl2	55.5	1199.8	66579
<-----/		Mg(HCO3)2	73.2		
3364 *Na -----> *Cl	4963	MgSO4	60.2		
		MgCl2	47.6	399.0	18993
Saturation Values Dist. Water 20 C		NaHCO3	84.0		
CaCO3 13 mg/L		Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L		NaCl	58.4	3364.2	196603
BaSO4 2.4 mg/L					

REMARKS:

----- ANDY MILLER

Petrolite Oilfield Chemicals Group

Respectfully submitted,
SHAWNA MATTHEWS