

ANALYSIS - BONE SPRING
PRODUCED WATER

POGO PRODUCING COMPANY
Proximity "31" Federal #4
Section 31, TWP 22-S, R 32-E
Lea County, New Mexico

TER ANALYSIS REPORT

Date : 1-23-93
Date Sampled : 1-22-93
Analysis No. : 006

Lease : RED TANK FED.
Well : 23-1 Bone Spring
Sample Pt. : WELL

ANALYSIS	mg/L	* meq/L
1. pH	5.9	
2. H2S	0	
3. Specific Gravity	1.155	
4. Total Dissolved Solids	243572.9	
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 48.8	HCO3 0.8
12. Chloride	Cl 151230.0	Cl 4266.0
13. Sulfate	SO4 250.0	SO4 5.2
14. Calcium	Ca 16840.0	Ca 840.3
15. Magnesium	Mg 4140.2	Mg 340.6
16. Sodium (calculated)	Na 71063.9	Na 3091.1
17. Iron	Fe 0.0	
18. Barium	Ba 0.0	
19. Strontium	Sr 0.0	
20. Total Hardness (CaCO3)	59100.0	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
840 *Ca <----- *HCO3	Ca (HCO3) 2	81.0	0.8	65
----- /----->	CaSO4	68.1	5.2	354
341 *Mg -----> *SO4	CaCl2	55.5	834.3	46296
----- <----- /	Mg (HCO3) 2	73.2		
3091 *Na -----> *Cl	MgSO4	60.2		
-----	MgCl2	47.6	340.6	16215
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	3091.1	180643
BaSO4 2.4 mg/L				

REMARKS: L. MALLET -FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
L. MALLET