

TRETOLITE

Chemicals and Services

PETROLITE

16010 Barker's Point Lane • Houston, Texas 77079
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box FF
Artesia, New Mexico 88210
(505) 746-3588 Phone
(505) 746-3580 Fax

WATER ANALYSIS REPORT

Company : POGO PRODUCING
Address : MIDLAND, TEXAS
Lease : CALMON #5
Well : SWD
Sample Pt. : UNKNOWN

Date : 09/03/93
Date Sampled : 09/02/93
Analysis No. : 330

ANALYSIS		mg/L		* meq/L
-----		----		-----
1. pH	5.1			
2. H ₂ S	0 PPM			
3. Specific Gravity	1.165			
4. Total Dissolved Solids		261670.1		
5. Suspended Solids		NR		
6. Dissolved Oxygen		NR		
7. Dissolved CO ₂		NR		
8. Oil In Water		NR		
9. Phenolphthalein Alkalinity (CaCO ₃)				
10. Methyl Orange Alkalinity (CaCO ₃)				
11. Bicarbonate	HCO ₃	61.0	HCO ₃	1.0
12. Chloride	Cl	161880.0	Cl	4566.4
13. Sulfate	SO ₄	50.0	SO ₄	1.0
14. Calcium	Ca	16400.0	Ca	818.4
15. Magnesium	Mg	3338.4	Mg	274.7
16. Sodium (calculated)	Na	79900.7	Na	3475.5
17. Iron	Fe	40.0		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO ₃)		54700.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	=	mg/L
318 *Ca <----- *HCO ₃	Ca(HCO ₃) ₂	81.0	1.0		81
----- /----->	CaSO ₄	68.1	1.0		71
275 *Mg -----> *SO ₄	CaCl ₂	55.5	816.3		45298
----- <----- /	Mg(HCO ₃) ₂	73.2			
3475 *Na -----> *Cl	MgSO ₄	60.2			
----- +-----	MgCl ₂	47.6	274.7		13075
Saturation Values Dist. Water 20 C	NaHCO ₃	84.0			
CaCO ₃ 13 mg/L	Na ₂ SO ₄	71.0			
CaSO ₄ * 2H ₂ O 2090 mg/L	NaCl	58.4	3475.5		203106
BaSO ₄ 2.4 mg/L					

REMARKS:

----- A. MILLER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
STEVE TIGERT