

CHEMLINK WATER ANALYSIS REPORT

Lab ID No. : 051590D

Analysis Date: May 15, 1990

Company : Murphy Operating
Field : Todd Field
Lease/Unit : Todd LSAU
Well ID. : Fresh Water Supply Well
Sample Loc.: Wellhead

Sampled By : Permian Treating Chemicals
Sample Date: *3-April-1990
Salesperson: Gayle Blackwell
Formation :
Location : Tatum, N. M.

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
Calcium as Ca++	127	6	Hydroxyl as OH-	0	0
Magnesium as Mg++	53	4	Carbonate as CO3=	0	0
Sodium as Na+ (Calc)	8	0	Bicarbonate as HCO3-	185	3
Barium as Ba++	Not Determined		Sulfate as SO4=	210	4
Oil Content	0		Chloride as Cl-	130	4

Total Dissolved Solids, Calculated:

713 mg/L.

Calculated Resistivity: 2.716 ohm-meters
mg/L. Hydrogen Sulfide: 0
mg/L. Carbon Dioxide: 10
mg/L. Dissolved Oxygen: 3

pH: 6.920
Specific Gravity 60/60 F.: 0.998
Saturation Index @ 80°F.: -0.205
@ 140°F.: +0.495

Total Hardness: 535 mg/L. as CaCO3
Total Iron: 0.10 mg/L. as Fe++

PROBABLE MINERAL COMPOSITION

	COMPOUND	MG/L	MEQ/L
	Ca(HCO3)2	245	3.0
Calcium Sulfate Scaling Potential	CaSO4	225	3.3
Not Present	CaCl2	0	0.0
Estimated Temperature of Calcium Carbonate Instability is 95 F.	Mg(HCO3)2	0	0.0
	MgSO4	64	1.1
	MgCl2	157	3.3
	NaHCO3	0	0.0
	Na2SO4	0	0.0
Analyst	NaCl	22	0.4

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