

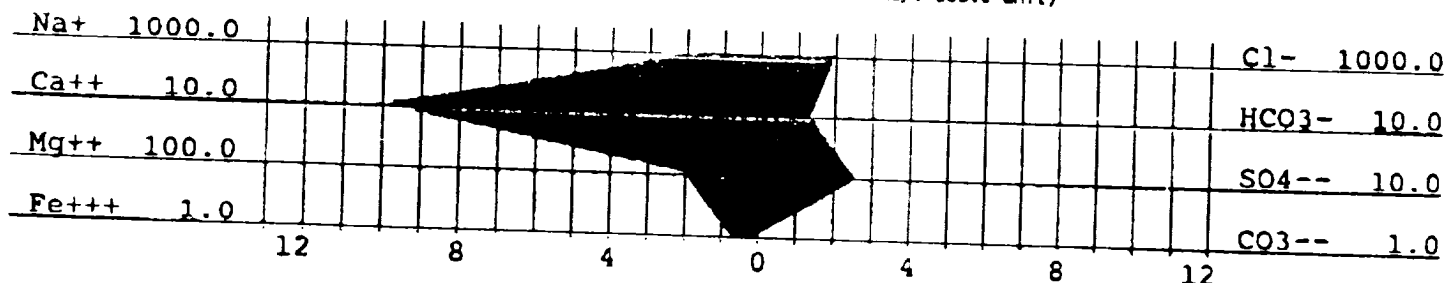
WATER ANALYSIS
for
ARMSTRONG ENERGY

Date of Analysis: OCTOBER 12, 1992
Company: ARMSTRONG ENERGY
State: N/D
Lease: GOVERNMENT E #1
Oil (bbl/day): N/D
Type of Water: PRODUCED
Sample Source: WELL HEAD
Representative: DON BLACKSTOCK

Analysis #: 1757
Company Address: N/D
Field: N/D
Well #: # 1
Water (bbl/day): N/D
Temp., C: 17
Date of Sampling: OCTOBER 11, 1992
Analysis By: SUZANNE WILLIAMS

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	300.00	
Calcium, (Ca++) :	100.00	2004.81
Magnesium, (Mg++) :	200.00	2430.28
Iron, (Fe+++)	0.81	15.00
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc):	1767.38	40649.65
Manganese, (Mn++) :	0.00	0.00

ANIONS		
Chloride, Cl-	2028.17	71997.52
Sulfate, SO4-- :	26.01	1250.00
Carbonate, CO3-- :	0.00	0.00
Bicarbonate, HCO3-:	14.00	854.18
Hydroxyl, OH-	0.00	0.00
Sulfide, S-- :	0.00	0.00
TOTAL SOLIDS (quant.):		119201.40

DISSOLVED GASES

Hydrogen sulfide:	0.00	mg/l
Carbon dioxide :	308.88	mg/l
Oxygen :	N/D	mg/l

PHYSICAL PROPERTIES

pH	:	6.05
Spec Grav.	:	1.100
TDS (calc.)	:	119215.45

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
17.0	-0.48	5491	0
27.0	-0.31	5708	0
37.0	-0.10	6002	0
Max entity, (calc.)	1836		0
RESIDUAL HYDROCARBONS:	N/D		

N/D = not determined

@20'C...CALCIUM SULFATE SCALING IS UNLIKELY.
@20'C...MODERATE CORROSIVE.