



Water Analysis Report by Baker Petrolite

OXY USA
GOVERNMENT "S"
WELL # 9

Account Manager
FRANK WONER

Summary			Analysis of Sample 114158 @ 75°F					
Sampling Date	12/18/98		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date	1/6/99		Chloride	25095	708	Sodium	15442	672
Analyst	JOANNA REGAN		Bicarbonate	915	15.0	Magnesium	122	10.0
			Carbonate	0.00	0.00	Calcium	683	34.1
TDS (mg/l or g/m ³)	42527.3		Sulfate	20.0	0.42	Strontium	62.0	1.42
Density (g/cm ³ or tonne/m ³)	1.034		Phosphate	N/A	N/A	Barium	20.0	0.29
Anion/Cation Ratio	1.00		Borate	N/A	N/A	Iron	135	4.83
			Silicate	N/A	N/A	Potassium	33.0	0.84
Carbon Dioxide	160 PPM					Aluminum	N/A	N/A
Oxygen			Hydrogen Sulfide		10 PPM	Chromium	N/A	N/A
						Copper	N/A	N/A
			pH at time of sampling		6.50	Lead	N/A	N/A
			pH at time of analysis			Manganese	N/A	N/A
			pH used in Calculations		6.50	Nickel	N/A	N/A

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl										
Temp.	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ · 2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press.
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0.	0.07	11.3	-2.50		-2.55		-1.74		0.88	8.41	2.68
100	0.	0.19	29.1	-2.54		-2.52		-1.74		0.71	7.41	3.44
120	0.	0.31	48.0	-2.56		-2.47		-1.74		0.56	6.36	4.27
140	0.	0.44	67.4	-2.58		-2.39		-1.72		0.44	5.29	5.12

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET



Scale Predictions from Baker Petrolite

Analysis of Sample 114158 @ 75°F for OXY USA, Jan/98

