



Water Analysis Report by Baker Petrolite

OXY USA
OXY LIVAN FEDERAL
WELL # 1
STACKPACK
Account Manager
FRANK WONER

Summary		Analysis of Sample 114150 @ 75°F					
Sampling Date	12/18/98	Anions	<i>mg/l</i>	<i>meq/l</i>	Cations	<i>mg/l</i>	<i>meq/l</i>
Analysis Date	1/6/99	Chloride	631	17.8	Sodium	238	10.3
Analyst	JOANNA REGAN	Bicarbonate	305	6.00	Magnesium	16.0	1.32
		Carbonate	0.00	0.00	Calcium	89.0	4.44
TDS (mg/l or g/m ³)	1506.14	Sulfate	14.0	0.29	Strontium	3.00	0.07
Density (g/cm ³ or tonne/m ³)	1.004	Phosphate	N/A	N/A	Barium	0.30	0.00
Anion/Cation Ratio	1.00	Borate	N/A	N/A	Iron	146	5.23
		Silicate	N/A	N/A	Potassium	64.0	1.64
Carbon Dioxide	70 PPM				Aluminum	N/A	N/A
Oxygen				<10 PPM	Chromium	N/A	N/A
					Copper	N/A	N/A
		pH at time of sampling		7.15	Lead	N/A	N/A
		pH at time of analysis			Manganese	N/A	N/A
		pH used in Calculations		7.15	Nickel	N/A	N/A

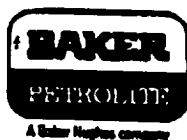
Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl										
Temp.	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ · 2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press.
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0.	-0.02		-2.56		-2.63		-2.30		-0.22		0.29
100	0.	0.10	3.36	-2.57		-2.57		-2.28		-0.36		0.39
120	0.	0.24	8.05	-2.56		-2.48		-2.25		-0.48		0.49
140	0.	0.38	13.3	-2.54		-2.38		-2.21		-0.57		0.62

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.

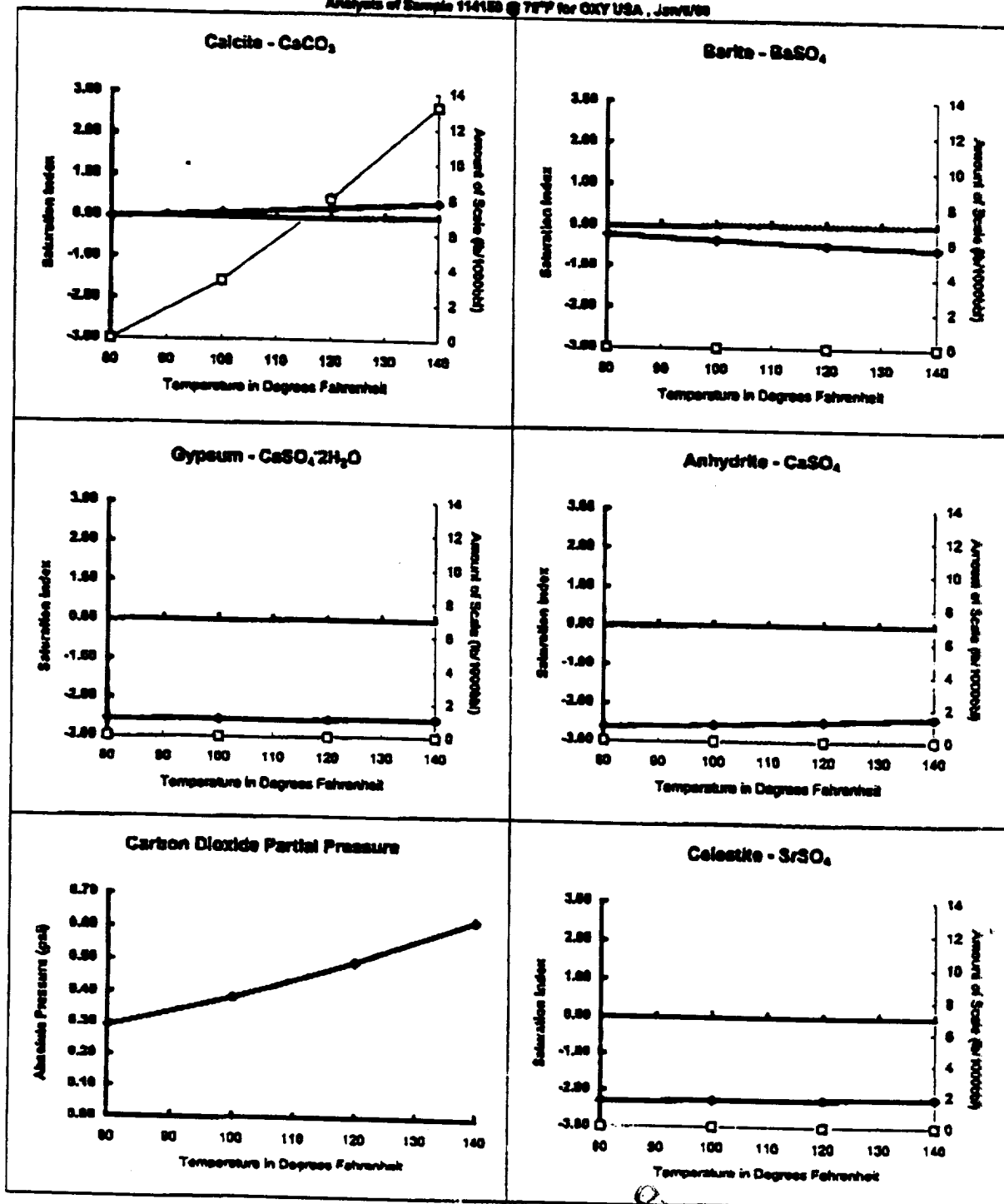
Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

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



Scale Predictions from Baker Petrolite

Analysis of Sample 114153 @ 75°F for OXY USA, Jan/99



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