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WILSON RESOURCE AREA

## Water Analysis Report by Baker Petrolite

### ARCO PERMIAN

BARBER UNIT  
BATTERY  
WATER TANK

Account Manager  
RON MATTHEWS

Summary			Analysis of Sample 108008 @ 75°F					
Sampling Date	3/1/00		<b>Anions</b>	mg/l	meq/l	<b>Cations</b>	mg/l	meq/l
Analysis Date	3/14/00		Chloride	21433	605	Sodium	11210	488
Analyst	JOANNA RAGAN		Bicarbonate	110	1.80	Magnesium	918	75.5
			Carbonate	0.00	0.00	Calcium	1904	95.0
TDS (mg/l or g/m <sup>3</sup> )	39132		Sulfate	3075	64.0	Strontium	36.0	0.82
Density (g/cm <sup>3</sup> or tonne/m <sup>3</sup> )	1.031		Phosphate	N/A	N/A	Barium	0.05	0.00
Anion/Cation Ratio	1.00		Borate	N/A	N/A	Iron	0.70	0.03
			Silicate	N/A	N/A	Potassium	445	11.4
Carbon Dioxide	60 PPM					Aluminum	N/A	N/A
Oxygen			Hydrogen Sulfide		80 PPM	Chromium	N/A	N/A
						Copper	N/A	N/A
			pH at time of sampling		6.60	Lead	N/A	N/A
			pH at time of analysis			Manganese	N/A	N/A
			pH used in Calculations		6.60	Nickel	N/A	N/A

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl										
Temp.	Gauge Press.	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> · 2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>		CO <sub>2</sub> Press.
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0.	-0.37		0.05	151	-0.00		0.09	4.84	0.36	0.02	0.25
100	0.	-0.25		0.03	85.7	0.04	95.1	0.09	4.85	0.20	0.01	0.32
120	0.	-0.13		0.02	52.1	0.11	238	0.10	5.38	0.06	0.00	0.40
140	0.	-0.00		0.02	45.8	0.20	404	0.12	6.30	-0.05		0.48

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 CO<sub>2</sub> pressure is actually the calculated CO<sub>2</sub> fugacity. It is usually nearly the same as the CO<sub>2</sub> partial pressure.