

# Memo

Taking the Omni Laboratories data at face value, by averaging over 6500 psi depletion, a pore volume compressibility of  $14.6 \mu\text{sips}$  ( $14.6 \times 10^{-6} \text{ psi}^{-1}$ ) applies to the upper sand samples, and a value of  $13.7 \mu\text{sips}$  applies to the lower sand samples. Testing protocols and sample size effects (specifically length-to-diameter ratio) may result in this value underestimating the actual reservoir compressibility. Work could be undertaken

## Results

The results of the pore volume compressibility tests (PVC) for the relative permeability cores (RPRC) are considered to be reliable, and may be used for reservoir performance and reserves recovery calculations. A summary of the results is given below.

Depth (ft. MD)	Porosity @ RAC	Pore volume compressibility ( $\times 10^{-6} \text{ psi}^{-1}$ )	Depletion range (psi)
Upper sand			
18100	0.136	19.0	0-1000
		14.6	3500-7000
18119.4	0.103	8.7	0-1000
		4.3	3500-7000
Lower sand			
19026.2	0.277	18.1	0-1000
		11.9	3500-7000
19047	0.251	12.0	0-1000

\*Normal consolidation stress is 1000 psi in upper sand, 2000 psi in lower sand

Taking the Omni Laboratories data at face value, by averaging over 6500 psi depletion, a pore volume compressibility of  $14.6 \mu\text{sips}$  ( $14.6 \times 10^{-6} \text{ psi}^{-1}$ ) applies to the upper sand samples, and a value of  $13.7 \mu\text{sips}$  applies to the lower sand samples. Testing protocols and sample size effects (specifically length-to-diameter ratio) may result in this value underestimating the actual reservoir compressibility. Work could be undertaken to quantify the magnitude of these effects, but consideration of this is beyond the scope of this memo.

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