Appendix B. Extrapolation Formula for Compression from Equation 7

By replacing dP in equation 8 with $d(P + a)$, we see that it is of the form

$$V = \exp\left[-\int \frac{x\,dx}{bx^2 + cx + d}\right]$$

The integral in the exponent is

$$\frac{1}{2b}\ln(bx^2 + cx + d) - \frac{c}{2b}\int \frac{dx}{bx^2 + cx + d} \qquad \text{(B1)}$$

where

$$b = m, \qquad m > 0$$

$$c = (1 + A - am)$$

$$d = -aA$$

In writing the expression for

$$\int \frac{dx}{bx^2 + cx + d} \qquad \text{(B2)}$$

it is of interest to know the sign of $q = c^2 - 4bd$; that is, we have $q = (1 + A - am)^2 + 4amA > 0$ if a, A, and m are all positive. This is the usual case since ordinarily $(K_0' - m) > 0$ and $C = (K/K_0)_0'' < 0$, and this requires

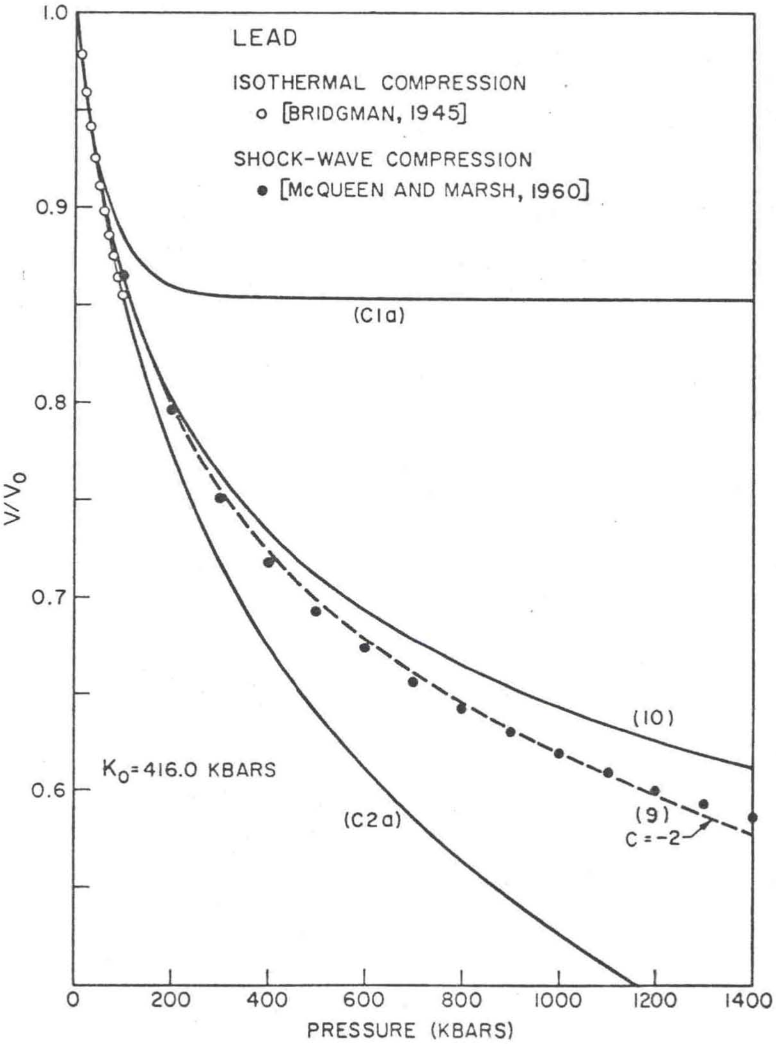

Fig. 7.