NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.
Velocities of longitudinal waves in terrigenous sediments

The velocities of longitudinal waves calculated for ideally elastic discrete media (the size and the shape of the grains obey the normal distribution, and the interstices are filled with a fluid) as functions of the physical properties of the components (Young modulus, elasticity, velocity of longitudinal waves) and of volume interrelationships of the components (porosity) were applied to several terrigenous sediments with the following results: the highest velocities and velocity gradients \( \frac{dV}{dz} \) correspond to cemented sands, whereas the lowest - to clay. Pure sands are characterized by intermediate values. The intervals of \( V \) and \( \frac{dV}{dz} \) values overlap for all these rocks. In sandy loams with 35 to 55% sand the \( V(z) \) curve may change the sign of its curvature. The results are at variance with the proposition of Gasman et al. (Ref. 1: Elastic waves through a packing of spheres, Geoph., 16, no. 4, 1951) that the

**SUBMITTED:** December 6, 1961