technique using rock matrix stress analysis or variable overburden method is therefore preferable.

Overlays and calibration curves can be developed from known pore pressure gradient corresponding to the difference in actual pressure parameter value in geopressured shale from the pressure parameter value on the extrapolated normal trend line. The estimated pore pressure can be determined by:

$$P_f = P_p \times \left(\frac{Vn}{Vo}\right)$$

where P_f = pore pressure at depth of interest, ppg
P_p = normal pore pressure, ppg
Vo = observed pressure parameter value at depth of interest
Vn = pressure parameter value on the extropolated trend line at depth of interest

The matrix stress or Equivalent Depth method assumes that part of the overburden supported by the clay matrix will be constant for clays with the same porosity. More precisely it assumes that the rock matrix stress at a shallow depth point where the pressure parameter value on the parameter normal trend is equal to the pressure parameter value at the depth of interest in the geopressured zone. If overburden gradient and normal pore pressure are known, then pore pressure at any depth of interest can be calculated by:

$$P_{fi} = Di \,.OBG_i - De\ (OBG_e - P_{pg})$$

where P_{fi} = formation pore pressure at depth of interest, psi
P_{pg} = normal pore pressure gradient, psi/ft
OBGi = overburden gradient at Di, psi/ft
OBGe = overburden gradient at De, psi/ft
D_i = depth of interest, ft
D_e = normal, equivalent depth, ft