ore with average grades of Mn ≥ 40%, SiO₂ ≥ 11% or Fe ≥ 7%.

The top mining horizon contains concretionary Mn ore that no longer meets Run-of-Mine specifications. A number of manganese ore types are recognised, based on texture, ore/gangue ratio, grade attributes, mineralogy, degree of cementation and lateritisation (see Tables 1 and 2 in Pracejus et al 1988).

Widespread, variable, post-depositional, diagenetic supergene and pedogenic processes have produced a complex vertical and lateral distribution of Mn ore units or facies (Pracejus et al 1988). Primary sedimentary structures in the massive Mn ore are preserved and are well documented in quarry G (Bolton et al 1988). Inversely graded beds are prominent in the lower part of the ore horizon and contain pisoliths grading uniformly from 2-20 mm in diameter over the thickness of the bed (Figure 46). Individual beds have been traced for up to 500 m along strike. Normally graded oolitic beds are present higher in the horizon, together with trough cross-bedding, ripple marks and burrow structures.

**Figure 45.** Generalised stratigraphic setting of Groote Eylandt Mn deposits (modified from Bolton et al 1990)