

Examining the relationship (if any) between elevated phosphorus and ore textural type in Pilbara iron ores

The CSIRO ore classification scheme for Pilbara ores was used as a reference frame to target recognisable ore types/textures with potentially elevated phosphorus content for detailed analysis. Particles of each individual ore texture were separated from a high-P ore and each class was characterised using methods including XRF, XRD, EPMA and synchrotron-based XAS. Results were then correlated with optical microscopy and hand specimen identification to establish any relevant associated mineralogical phases and/or textures. This represents a more systematic approach to identification of high-P ore components based on particle and goethite type and texture. The information can then provide the basis for more targeted P-removal strategies factoring in the relationship between particle/ore texture and P deportment.

AUTHORS

M I Pownceby, M J Peterson, J R Manuel and N Karimian. CSIRO Mineral Resources