

Mineralogical Characteristics of The Zhenba (Shaanxi) –Chengkou (Chongqing) Manganese Metallogenic Belt and Their Genetic Significances

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Abstract: Various ore samples have been systematically collected from typical Mn deposits in the Zhenba (Shaanxi) – Chengkou (Chongqing) manganese (Mn) metallogenic belt. Microscope, scanning electron microscope (SEM) and X-ray diffraction (XRD) are applied to study mineral components of those ore samples. The results show that rhodochrosite is the major Mn-rich mineral and is associated with pyrite, pentlandite, calcium orthophosphate, sphalerite, and barite in various deposits of the Chengkou Manganese orefield. In the Zhenba Mn orefield, Mn-rich minerals, including bementite, braunite, manganosite, rhodochrosite, and psilomelane, are associated with barite, albite, dolomite, and clinocllore. The obvious different mineral components between deposits of the Chengkou orefield and those of the Zhenba Mn orefield indicate that those Mn deposits of two orefields were formed in different environments. In addition, from the Zhenba orefield to the Chengkou orefield, the deposition environments of deposits are gradually changed from the oxidized to reduced environments.

Keywords: Zhenba; Chengkou; Mn deposit; rhodochrosite; bementite; braunite