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青海锡铁山铅锌矿床喷流沉积系统(SEDEX)成矿流体研究

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摘要:

锡铁山铅锌矿床位于青海省海西州大柴旦镇,是我国著名的大型喷流沉积铅锌矿床。最新的研究认为锡铁山矿床发育有完整的巨大的喷流沉积系统。本文的成矿流体初步研究表明,代表喷流管道相的网脉状蚀变岩的温度、盐度范围非常宽,多期次的流体活动强烈,具有喷流系统管道相的明显特征。代表近喷口相的产于厚层状大理岩中的非层状铅锌矿体旁侧的碳酸盐中包裹体个体大,温度高,亦有明显的形成于未喷出海底的中-高温热液活动特征。碳酸盐(大理岩)与网脉状蚀变岩有相同的 $H_2O-NaCl-CO_2$ 流体类型,温度稍低,流体从管道相流向非层状矿体,具有继承性。层状矿体流体的均一温度及冷冻温度范围与非层状矿体基本相同,但缺少大气液比包裹体,缺少含子矿物包裹体及流体中的 CO_2 组分,均一温度略有降低。分析认为层状矿体的流体与非层状矿体有一定的继承性,可能来自喷流沉积系统的喷出海底的向东南方向延伸的喷流管道。

英文摘要:

The Xitieshan lead-zinc deposit is located at the northern margin of the Qaidam basin, Qinghai Province and has a complete marine sedimentary-exhalative system. Our preliminary study of ore-forming fluids shows that fluid inclusions in quartz from altered stockwork rocks that represent the pipe facies have a wide range of temperature and salinity. The intense fluid activities are characteristics of the pipe facies of the exhalative system. Fluid inclusions in carbonates near the unstratified ore bodies hosted in thick-bedded marble which represents vent-proximal facies are large in size and have moderate to high temperature. They represent unerupted sub-seafloor fluid activity. Fluids in altered stockwork rocks and carbonates have similar $H_2O-NaCl-CO_2$ system and higher temperature, both belonging to the sedimentary-exhalative system. The fluids migrate from the pipe facies to the unstratified ore bodies. The homogenization temperature and freezing temperature of fluid inclusions from stratified ore bodies are similar with unstratified ore bodies, but lack the inclusions of great gas/liquid ratio and containing daughter minerals and CO_2 component in fluid and the homogenization temperature is slightly lower. That is to say their fluid is continuum. The ore-forming fluid is come from vent-proximal facies that blow out from sea bottom and have moved to southeast of mining area and indicate that there is a huge ore-forming potential southeastwardly however.

关键词: [喷流沉积系统](#) [管道相](#) [非层状矿体](#) [层状矿体](#) [流体包裹体](#)

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