

The Pallacos of Cerro Rico de Potosi, Bolivia: A New Deposit Type

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Abstract

Pallacos are a new kind of ore deposit and are described here in detail for the first time. They are found on the flanks of the Cerro Rico de Potosi, Bolivia, the world's largest silver deposit. Fundamentally, pallacos are gravels whose clasts contain sufficient disseminated silver so as to be bulk minable. The silver-bearing clasts originated from the summit of Cerro Rico and are composed of dacite porphyry or air-fall tuffs or arkosic sands of the Caracoles Formation that have been altered to vuggy silica or jasperoid. Analysis of facies, bedforms, depositional textures, and clast sizes and percentages suggests that there are two types of pallacos, each with a different depositional mechanism. One kind, the Huacajchi type, formed from multiple water-transported debris flows. The other kind, the Potosina type, is interpreted as catastrophic landslides. Metal zoning, clast alteration style, and silver grade vary between the two pallaco types.