

## **Jurassic sinter and stromatolite deposits related to Au-Ag mineralization, Deseado Massif, Patagonia, Argentina**

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The Deseado Massif is a 60,000 km<sup>2</sup> region located in southern extra-andean Patagonia, Argentina. The most important feature is an extensive middle to upper Jurassic rhyolitic volcanic complex (Bahía Laura Group).

Very important epithermal ore deposits, related to Jurassic volcanism, have been found since the discovery of low sulphur Au-Ag mineralization in Cerro Vanguardia Mine, in 1988. Lately, seven Jurassic hot spring deposits have been found in the western Deseado massif.

Manantial Espejo, La Josefina, and La Marciana are siliceous sinters deposits. The first one is mainly composed of hydrothermal breccias. The others are laminated precipitates, with evidences of organic activity (plant moulds and small vertical tubes) in La Marciana sinter. La Marcelina, El Macanudo, San Agustín and Las Marianas areas are stromatolite deposits, characterised by calcareous cylindrical structures with concentric features, replaced by silica.

Fluid inclusions and isotopic studies carried out confirm the shallow origin of the hot spring deposits. Geochemical analyses are coincident with most world examples. They show low precious metal values and slightly anomalous As, Sb, Tl and Hg. La Josefina is an exceptional Au-Ag bearing sinter deposit.

These superficial forms are interpreted to belong to Jurassic paleosurfaces of geothermal systems related to the coeval volcanism. Three of them (Manantial Espejo, La Josefina and Las Marianas) are related to Au-Ag mineralization. Therefore, Deseado Massif hot spring structures are an important guide in exploration of epithermal precious-metal ore deposits.