

### **Prospectivity mapping for multi-stage epithermal gold mineralization in Argentina**

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Three distinct periods of epithermal-style Au-Ag mineralization are defined in Argentina. A low sulfidation epithermal mineralization event in the Permo-Triassic occurred along the eastern margin of the Cordillera Frontal in the San Juan province, which hosts among others the Casposo Au-Ag deposit. A further low sulfidation event during the Jurassic has been documented, eg. In the Deseado Massif in southern Patagonia, which hosts the Cerro Vanguardia Au-Ag deposit. A high sulfidation epithermal event in the Miocene is observed in the El Indio belt in the Cordillera Principal which hosts the Pascua-Lama and Veladero Au-Ag-Cu deposits.

During all three periods the epithermal mineralization is hosted in felsic to intermediate volcanic units and is structurally controlled at the mine or camp scale, with a preferred structural orientation within each mineral district. However, there is no overall preferred orientation when comparing the different districts.

From the publicly available 1:2,500,000 digital geology map of Argentina, all felsic to intermediate volcanic units of Permo-Triassic, Jurassic and Miocene age were extracted. Utilizing a gravity map, new large-scale structures were interpreted. Using both public data and new interpretations, a prospectivity map for epithermal-style Au-Ag mineralization was generated for Argentina using the conceptual Fuzzy Logic method. The prospectivity map produced was validated by its ability to predict known areas of Au-Ag mineralization.