

Geochemical analysis of low-sulphidation epithermal deposits on the La Victoria property in the Ancash Department of the Republic of Peru

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The La Victoria property is located in the Ancash Region of the western Peruvian Andes. It is situated along an epithermal gold belt that is host to some world class gold deposits such as Yanacocha, Lagunas Norte, La Arena and Shahuindo. The property itself is 44.88 km² and ranges in elevation from 3000 to 4500m above sea level. Drilling operations have yet to commence; however, significant initial exploration has been conducted including zone mapping and sampling, mineral mapping, petrographic analyses, and geophysical surveys. From this initial work, two major mineralized areas (San Markito and Rufina) have been identified as important for ore exploration. Thus far, both prospects seem to be consistent with low-sulphidation epithermal deposits, with possible overprinting of porphyry mineralization in the Rufina area. The next stage of exploration is to examine the geochemistry of grab samples to determine the mineralogical and geochemical signatures of the gold mineralization and put these into a consistent depositional model, which will ultimately help target areas to drill. The analytical techniques that will be used in this study include petrographic analysis, scanning electron microscopy (SEM), electron probe micro analysis (EPMA), X-ray diffraction (XRD), X-ray fluorescence (XRF), and X-ray absorption near-edge structure (XANES). These techniques will identify the textures, mineralogy, chemical compositions, and oxidation states of representative samples to better characterize the gold mineralization. At La Victoria, the Rufina prospect is situated at a lower elevation than the San Markito prospect and is characterized by vuggy quartz, covellite, pyrite, galena and sphalerite, while the San Markito prospect is characterized by breccias and carbonates. Both prospects are similar regarding the presence of diorites and breccias with minerals such as quartz, sericite, arsenopyrite and gold. Oxidation is also present at both prospects, indicating the possibility of high-grade mineralization. The mineralogy at La Victoria is tantalizingly similar to the other major ore deposits in the area: specifically, the presence of breccias, vuggy quartz, sericite, covellite, arsenopyrite and sphalerite. This may indicate that there is potential for the La Victoria property to host an ore deposit. The mineralogical and geochemical data obtained in this study will be beneficial for continued exploration of the La Victoria property, including shaping decisions regarding future drill targets and possibly even extraction.