The Valley Project, a New High-Grade Reduced Intrusion-Related System in the Tintina Gold Province, Yukon Territory

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The Valley target is a reduced intrusion-related gold system (RIRGS) hosted in a Cretaceous granodiorite intrusion in the Selwyn Basin, eastern Yukon Territory. Although the mineralization is similar to classic RIRGS found within the Tintina Gold Province between Alaska and Yukon, such as Fort Knox and Dublin Gulch, Valley hosts unusually high gold grades for this deposit type. The key characteristics of this system are presented after two years of exploration.

Valley mineralization was discovered following up a 100-ppb Au stream-sediment anomaly located downstream of vein-mineralized outcrops. NW-oriented faults control the emplacement of an elongated biotite + hornblende granodiorite stock composed of three intrusive facies: a fine-grained, medium-grained, and porphyritic granodiorite. Potassic to sericite + chlorite alteration is restricted to vein selvages and fault zones. Hornfelsed country rock is characterized by strong biotite and silica alteration obliterating primary sedimentary textures of sandstones, mudstones, and siltstones of the Ordovician Road River Group. All intrusive facies host early pyrrhotite + pyrite + chlorite veins that are crosscut by steeply dipping quartz-carbonate sheeted vein arrays that parallel the regional fault system. The sheeted quartz vein system hosts multiple gangue and ore assemblages that mostly carry visible gold as free grains contiguous to Bi-Te-Pb-Ag sulphide alloys. Drill results from 2022 demonstrate continuous, high-grade intersections up to 2.5 g/t Au for 319 m from surface indicating bulk tonnage potential associated in the granodioritic intrusion and its quartz sheeted vein system.

These results indicate that the Valley system is a new discovery of RIRGS type that significantly enhances the metallogenetic potential of eastern Yukon. At the district scale, similar mapped intrusions form a WNW-oriented corridor, indicating potential for further discoveries in this underexplored district.