

Reman A, Ross M, Lee RG, 2017, Towards a 3D Quaternary and neogene lithostratigraphic model of the Highland Valley Copper mine area, south-central British Columbia, Abstract, PDAC-SMC, Toronto, ON

Highland Valley Copper (HVC) is a large porphyry Cu-Mo system located in British Columbia, and is partially covered by more than 200 meters of Quaternary and Neogene sediments. Geochemical pathfinder elements and indicator minerals have been identified at the surface recently and traced back to their shallow mineralized sources. However, in areas where the mineralization is more deeply buried, little is known about the composition and physical properties of the overlying sediment cover; this has implications for defining the full dispersal patterns throughout the transported sediment cover and for geophysical inversion efforts. Three sonic drillcores have been logged so far and interpreted out of the nine that will be used to define the three-dimensional sediment stratigraphy at HVC. The drillcores are located at distances ranging from 61 to 97 m from the southeastern wall of the Valley pit. Work thus far has focused on facies analysis and stratigraphic correlation. The lithologies of the pebbles have been classified to establish provenance. The till units have also been analyzed for their magnetic susceptibility. Preliminary results suggest a complex stratigraphy that shows important differences at depth from that established by previous workers in the Valley pit thus suggesting lateral facies transitions over short distances, as well as depositional units of variable spatial extent. The sediment cover is thus expected to be highly heterogeneous both in terms of composition/provenance and geophysical characteristics.

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