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A Study of the Gold-To-Sulphide Ratio in the Cononish Au-Ag Deposit, Tyndrum, Scotland

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The Cononish Au-Ag deposit is Scotland's only operational gold mine, located near the historic mining town of Tyndrum in the Loch Lomond and Trossachs National Park. Gold at Cononish is not visible at the face- or hand-specimen scale, but it is associated with abundant, easily visible sulphide phases. The project aim is to explore the paragenetic and visual relationship between the occurrence of sulphides, their textures, and the presence of gold at the Cononish deposit.

The gold-to-sulphide ratio will be studied qualitatively through textural analysis on both a micro- and macroscopic scale through field- and laboratory-based data collection. Assayed samples from the Cononish vein with variable gold-to-sulphide ratios will be examined using polished thin sections and SEM-EDS analysis. The ratio will also be studied quantitatively through statistical data analysis of screen fire assay results from the Scotgold Resources Ltd. (the deposit owners) database of face mapping and channels samples. The association with, and abundance of, penalty elements (Pb and Zn) will also be examined.

The findings will be used to develop a visual guide of sulphide patterns to assist geologists to better estimate gold concentrations. This research aims to contribute to the understanding of gold and sulphide relationships in vein-hosted Au-Ag deposits by studying Cononish, which is the best characterised of the Dalradian gold deposits. By focusing on the Cononish deposit, this study will provide valuable insights into the significance of the gold-to-sulphide ratio and its implications for the mineralisation process. This work could also provide insights into mineralisation across the Dalradian gold belt and the Grampian Terrane of the Caledonian orogenic belt, having applications for regional projects in the vicinity of Cononish to the national scale of Scotland as a whole, and internationally to Dalradian gold in Ireland, and possibly even Canada.