

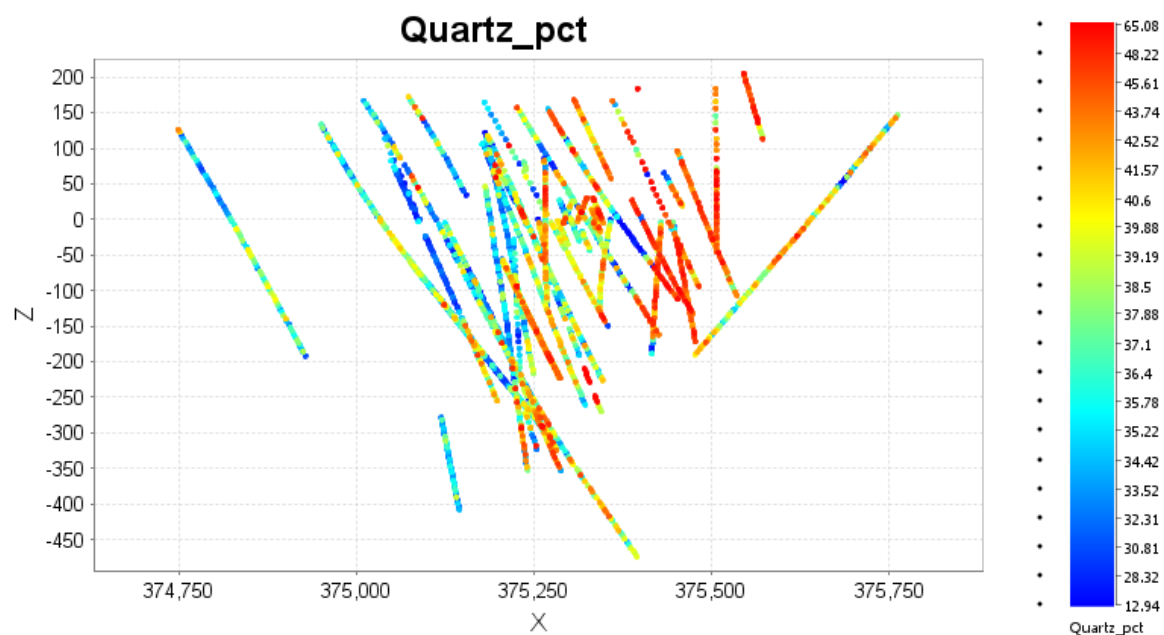
What kind of data do you need to make a mineralogy model that is useful, rather than just a cartoon for corporate presentations? We really want a model that relates to power consumption for crushing and grinding, mill throughput rates, flotation performance, pyrite/carbonate balance (NAP), etc.

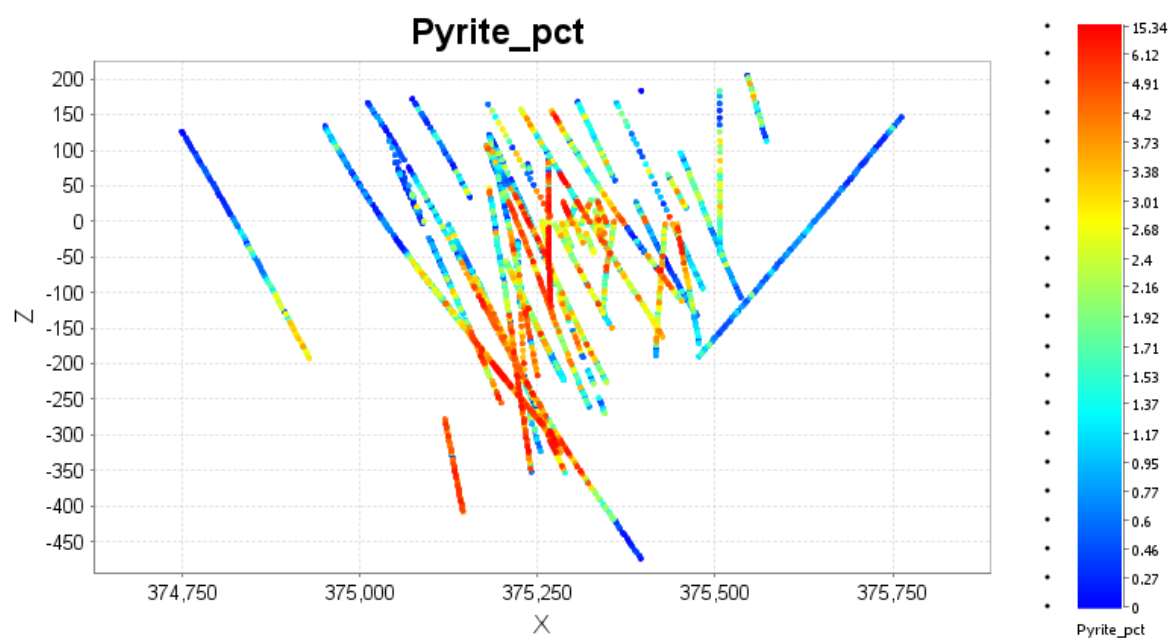
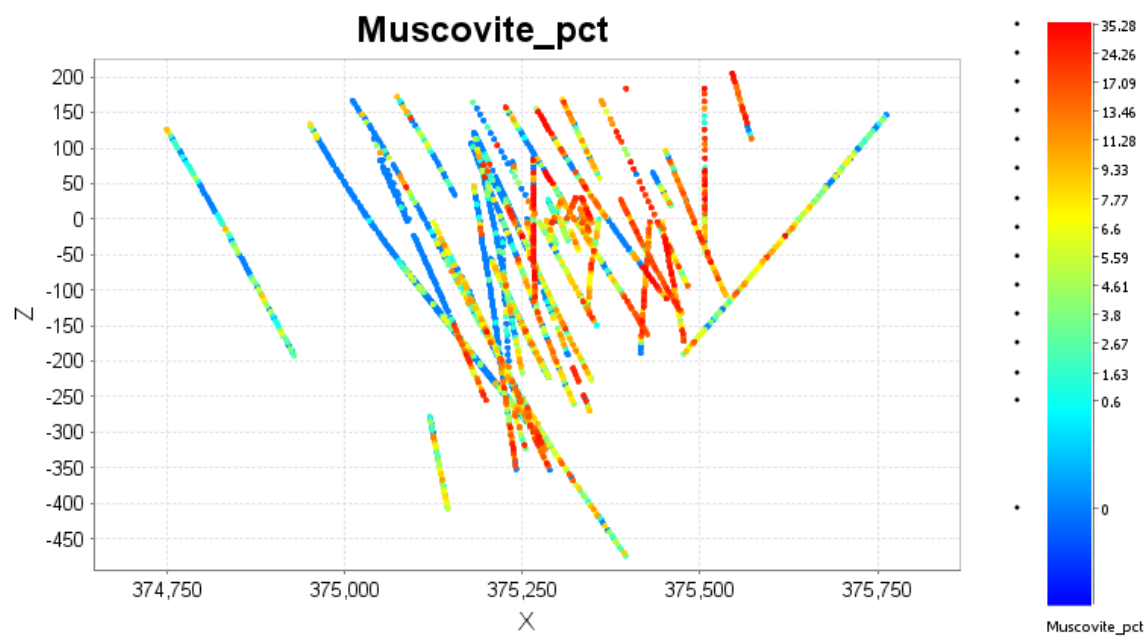
We need quantitative mineralogy data, not just generic mineral zones.

- Visual logging is highly subjective and not quantitative.
- Spectral methods provide the “spectral contribution” of minerals that are active in particular wavelength ranges. These are partial analyses.
- True quantitative methods, eg qXRD or QEMSCAN, are so expensive that we generally analyses a small number of selected samples.

Comet is a mass balance calculation system that estimates mineralogy from 4 acid digest ICP analyses for every sample interval in your database.

Evolution Mining gave the full Mount Rawdon database to the Geological Survey of Queensland, and it is now freely available online. I used that data for a quantitative mineralogy calculation using Comet. Here is a thick section of results from Mount Rawdon, compared with Ned Howard’s published section.





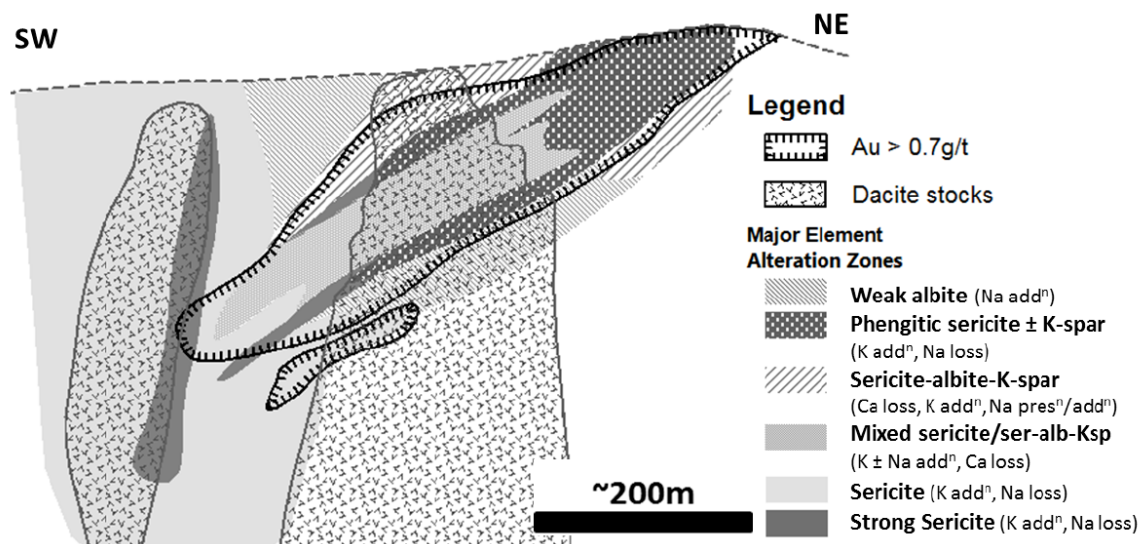
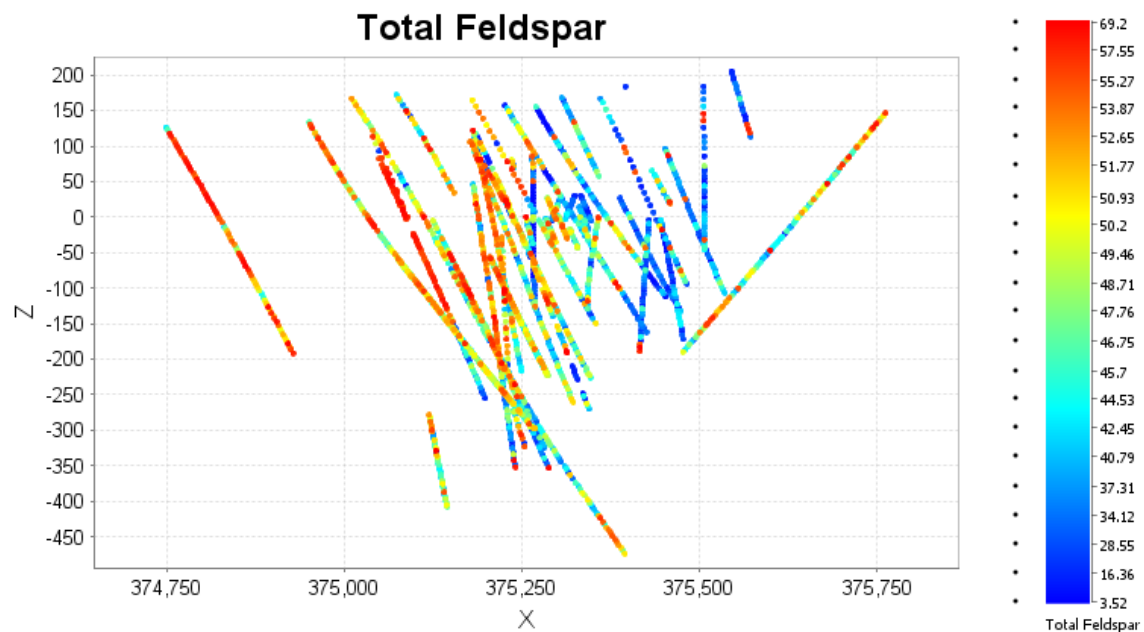


Figure 6: Simplified cross section through the Mount Rawdon gold deposit looking NE showing the zonation of alteration minerals based on K and Na mass changes. Abbreviations: addⁿ: addition, alb: albite, Ksp/K-spar: K-feldspar, presⁿ: preservation, ser: sericite)

Howard, N., 2015, June. Geochemistry and hydrothermal alteration at the Mount Rawdon gold deposit. In *New England Orogen Geology, Tectonics, Economics; Australian Institute of Geoscientists Seminar Series* (pp. 1-8).