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Comments on Second Batch Petrography Samples

As a group these samples were more difficult than the first group of samples. The main problems are with determining the peak metamorphic assemblage and the interpretation of chlorite and sericite/muscovite.

Three of the samples have significant carbonate component (some are dolomite): Samples CD-1 and 863669 are probably carbonate protoliths; Samples 863677 and 863680 have mixed silicate and carbonate components and are probably sedimentary protoliths. These samples have components of chlorite and white mica (sericite/muscovite?). It is difficult to tell if chlorite represents the peak metamorphic assemblage or if it has replaced another earlier metamorphic phase (biotite). For some of the samples I suspect that chlorite may represent the peak metamorphic assemblage having replaced significant dolomite. In samples with sericite/muscovite it is difficult to tell if the white mica is metamorphic or related to hydrothermal alteration. For samples with white mica interleaved with biotite, I have interpreted it to be metamorphic and it suggests close to boundary between medium and high grade metamorphism.

I have interpreted the presence of abundant axinite in sample 863669. The optical properties and associations best fit axinite. There is an unknown sulfide in sample 863680 that looks most like arsenian pyrite (not arsenopyrite) that I have seen as overgrowths on pyrite grains, in the past. Your geochemistry might help with this unknown.

Anyway, I hope I have answered the main questions about these samples. Let me know if you have any questions or comments.

Regards,

Jim Shannon