Mobilisation of metals in the shallow levels of the Otago Schist, at Coronation North, Macraes Mine

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Study Area
Coronation North
Clay Alteration Mineralogy

[Image of mineralogy images with Al, Fe, Mg, 200µm scale]

[Diagram showing Miocene basalt ~20m, Regional unconformity, Clay-altered schist variably oxidised: free Au, Decreasing alteration intensity, Eocene sediments, Fresh schist: Au in sulphides]
Gold and Silver
Where is the Arsenic?

- Fresh mineralised schist ~1000 ppm
- Clay altered ~ 100 ppm
- Peaks with max ~800 ppm
- Found as 1% in pyrite grains, no arsenopyrite
Take home messages

- Schist has been variable altered to clay minerals and oxidised
- Gold and silver found as free microparticles, they have been mobilised from sulphides during the alteration of the schist
- Silver has separated from gold
- Arsenopyrite broken down
- Arsenic levels vary in clay zone, found in pyrite