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A stratiform (Cu-Zn±Pb) massive sulphide and gold deposit in the Kwademen birimian system (Burkina Faso, West Africa)

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The Kwademen birimian polymineral (Cu-Zn±Pb±Au) deposit is made of mafic dominant volcanic, neutral and subordinate acid through a bimodal volcanic suite. The metamorphic climate that affects the rocks is around the green schist facies.

The associated volcano-sedimentary occurrences develop a steep geomorphology marked by a maganiferous deposit. Gold and massive sulphide deposits are hosted by felsic volcanic accommodated by a shear zone which constitutes the track in uprising mineralizing fluid for gold and base metal (Cu, Zn, Pb).

Hydrothermal alteration mineral phases involved in the process are in order of importance: (i) sericite,



(ii) epidote, (iii) chlorite, (iv) carbonate, and (v) biotite. The spatial organization of sulphide (notably pyrite) is conformable with a stratiform deposit from hydrothermal provenance. High copper value recorded in felsic mylonite can explain enrichment controlled by shearing. Finally the proximity of Kwademen with the Perkoa Zn-Ag-Pb volcanogenic massive sulphide [1]. deposit is encouraging to target an economic deposit type in relation with the style of the mineralization within volcanic and plutonic terrane of that birimian.

Figure 1: Overview of Kwademen manganeseiferous hill

Key words: Burkina Faso, Kwademen, massive sulphide, hydrothermal alteration, bimodal suite, Palaeoproterozoic,

References:

[1] Schwartz M O and Melcher F (2003) Econ Geol 93:1463-1485

