

DISSOLUTION AND TRANSLOCATION OF RESIDUAL GOLD PARTICLES  
UNDER EQUATORIAL LATERITIC CONDITIONS

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## ABSTRACT

Gold mobility under supergene conditions have been the subject of a great number of studies as summarized by Boyle (1979). However, most of these works have demonstrated this mobility by indirect evidences. Thus, for example, Benedetti (1989) reports that trace gold concentrations with an average of  $10^{-10}$  to  $10^{-11}$  mole / liter have been found around gold deposits in acidic surface waters. An other indirect evidence is given by Mann (1984), Freyssinet *et al.* (1987), Lawrance (1988), Colin

This deposit provides an ideal opportunity to study gold mobility under equatorial lateritic forest conditions.

Morphological and chemical studies have been performed on gold particles extracted from the fresh auriferous lisvenite and from the different weathering layers through the profile toward the surface. The results demonstrate that the gold particles are residual and subjected to increasing

acide are available ligands capable of complexing gold (Colin and Vieillard, submitted). Thermodynamic calculations show that the gold solubility increases with increasing silver contents and that the complex formed are aurous hydroxichloride and organo-metallic complexes. These gold complexes are stable under surficial lateritic conditions and thus gold can be removed from the upper part of the weathering mantle.

Thus, both chemical and translocation processes cogenerate the mobility of gold and gold particles in equatorial lateritic weathering profiles.

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