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MINTEK'S IGOLI PROCESS. HISTORY, PILOTING AND TECHNO ECONOMICS

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ABSTRACT

South Africa has an extensive abandoned mine problem, with the country having more than 6000 abandoned mines according to Statistics SA. Although the SA Mine legislation (MPRDA s.43(1)) requires mining operators to make financial provision for mine closure and rehabilitation, it is not effectively enforced. This has led to extensive illegal mining and the rise of criminal enterprises.

The South African government has identified artisanal mining as an initiative to help to alleviate unemployment, but the criminality and safe use of cyanide and mercury have severely curtailed this initiative.

The iGoli project, which started at Mintek more than 20 years ago with its main purpose as an alternative technology to using mercury for gold recovery, has come a long way and its scope and applicability has increased.

The project has expanded and now covers:

- Alternative process to using mercury in gold recovery,
- Treatment of mine tailings,
- New life for abandoned mines,
- Assisting artisanal miners,
- Linking other Mintek technologies and
- Initiating down stream processes.

This paper will discuss the latest developments in the iGoli process as it applies to piloting for the treatment of mine tailings, techno economic evaluation as well as other Mintek's offerings to assist in addressing the abandoned mine problem together with socio-economic upliftment of disadvantaged communities.

The benefits to the community includes job creation and the freeing of previously locked land for use while the SA government benefits through the reduction of the following adverse effects of abandoned mines and dumps:

- Environmental impact from dumps,
- Illegal mining,
- AMD,
- Locking of land and
- Loss of revenue
- Unemployment (Due to mine closure).

Keywords: iGoli, illegal mining, artisanal mining, abandoned mines, socio-economic.