

HANNAH PROCESS

RECOVERY OF FREE CYANIDE AND COPPER CYANIDE FROM GOLD PLANT TAILINGS

Cost-cutting and environmental sensitivities related to cyanide are two major issues facing the gold industry today. Any process that will decrease pressure on either front is welcomed.

SGS Minerals Services' metallurgical group and John A. Thorpe of Thorpe Consulting have developed a new process, known as the Hannah Process, which uses strong base resin technology to extract free cyanide radicals as well as metal-cyanide complexes from gold tailings. Thus, it addresses both of these issues simultaneously.

Especially well suited for the extraction of copper cyanide, the Hannah Process can be applied to either solutions or pulps. The novel Hannah Process can produce recycled cyanide at about one quarter of the price of new cyanide. When the cost of cyanide destruction is included (which is now mandatory in many jurisdictions), the cost can be less than one-sixth that of buying and destroying new cyanide.

Some specific features of this process include its ability to:

- Efficiently extract free cyanide and metal cyanide complexes in 2-3 adsorption stages
- Rapidly elute cyanide and base metals under ambient conditions
- Separate and recover valuable by-products in the eluate, such as copper compounds
- Recover cyanide for direct recycle-to-leach, without volatilizing toxic hydrogen cyanide gas



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