

The Challenge of Sustainable Small and Medium Scale Mining in Guyana, S.A.

By Karen Livan

Manager, Environmental Division

Guyana Geology and Mines Commission
(GGMC)



Importance of Small and Medium Scale Operations

About 20-25% of gold production (110,000 oz, unrefined in 1999) and all of the diamond production (47,000 metric carats in 1999) are from medium and small scale operations, mainly using hydraulicking and suction dredges.

Anticipated Progression to Open Pit Operations

It is expected that medium scale mining will progress from the current principal hydraulicking/dredge mining to open pit style operations.



GGMC's mandate for Environmental Protection in Mining

Increasingly, from the 1980's, GGMC has focused its efforts on issues related to Mining and the Environment.

River Dredging

From the mid 1980's, suction dredge units had grown considerably in capacity, facilitated by the incorporation of a winch to operate the suction (gravel pump) end of the dredge. The slurry from the gravel is processed by a wide, riffled sluice mounted on a barge.



Hydraulicking

From the early 1990's, as the rivers were perceived to be depleted, dredge mining has shifted from river to land. The ore is hydraulicked into a sump, then delivered to a riffled sluice by gravel pumps.



Environmental Awareness

Fostered by:

- United Nation's Earth Summit Conference in Rio in 1992 and its 'Agenda 21' for Sustainable Development
- Increasing multiple land use: mining-forestry-ecotourism
- Articulated concerns of indigenous people of the Amerindian communities

GGMC's approach to Environmental Management

- Evaluation and Enhancement of processing techniques used by small and medium scale miners
- Drafting of Codes of Best Practices in an Environmental Management Agreement for medium-scale miners
- Collecting water/sediment quality data

(continued)

GGMC's approach to Environmental Management

- Creation of an Environmental Division in October 1998 (in GGMC)
- Demonstration of new techniques
- Introduction of local manufacture and use of simple mercury retorts
- Updating Mining Regulations and making them reflect greater responsibility for environmental protection

Building Institutional Capacity & Environmental Management

- Technical and financial assistance through CIDA sponsored Guyana Environmental Capacity Development (GENCAPD) mining project
- Environmental Management Program of IDB

CIDA: Canadian International Development Agency

IDB: International Development Bank

New Challenges

- Development of steep, dangerous mining faces by hydraulicking
- Dilution of ore by slumped overburden
- Discharge of sediment laden tailings and process water with high levels of suspended solids
- Undesirable practices in mercury use

Environmental Protection, Efficiency, Economy

It is intended to show that more environmentally friendly techniques can also bring benefits of efficiency and economy...

‘Taking pride in one’s environment, and working towards economic and environmental sustainability’

