

# Gold recovery and fixing the environment

A joint venture, which has seen several sites yielding additional gold from recovered materials and improved the state of the environment within and around the sites, has also enhanced a miner's bottomline.

In 2012, Ncamiso Mining was contracted by Pan African Resources to increase its gold bearing resources and carry out environmental rehabilitation at its Evander gold mine.

“This was an opportunity for us to increase Evander’s metallurgical plant’s gold yield, while furthering the commitment of everyone involved to decreasing state-owned liability of derelict mine dumps and plant areas that were previously deemed to be of no value and a scenic eye-sore,” says Ncamiso managing director, Fikile Mashinini.



## Dam rehabilitation

The company signed an agreement to rehabilitate the dam at the Bracken Shaft and haul gold-bearing material from the Bracken site to Evander’s metallurgical plant for gold recovery.

On completion of the rehabilitation of the dam, Ncamiso entered into a toll treatment agreement, along with the local municipality and the department of mineral resources (DMR) to do a clean-up operation at Blesbokspruit. More than 100,000 metric tons of gold-bearing material had been brought into the spruit by illegal miners. Ncamiso ensured that this was cleaned out and then toll-treated at Evander.

## Recycling

Two years later, Ncamiso was contracted to screen out gold-bearing fines from Evander’s Daggafontein operation. An extension of this agreement was to screen out reef at construction materials company, Afrisam’s sub-Nigel operation and deliver the fines to Evander for processing and then feed the remaining waste-rock back to AfriSam for aggregate crushing.

“Our main goal in each case was to provide crushing and screening services and to rehabilitate the previously mined areas with the intent to change the end land-use,” says Mashinini. “Through these activities we have helped to increase Evander’s revenue through the recovery of gold from the areas we have worked on.”

### **Gold recovery**

On a day-to-day basis, Ncamiso is responsible for delivering toll treatment material to Evander’s metallurgical plant, cleaning spillage material from the conveyor belts and feeding the bins. All material is sampled and bottle-rolls stimulating plant conditions are done in order to verify recovery so that proper metal accounting is carried out. They also handle on-site sampling of delivered material and screening at -25mm. “The AfriSam dumps contain about 2,5m metric tons of material of which around 25% is gold bearing when screened at -25mm,” Mashinini explains. “To date 200kg of gold has already been recovered and delivered to Evander from about 150,000 metric tons of material screened at -25mm and bearing 1,8 grams of gold per ton. The lifespan of the dump is estimated to be 11 years.”

According to Mashinini, the gold that has been recovered will add value to Evander’s gold accounting. He goes on to explain how important gold recovery and environmental remediation are to sites such as these. “The most obvious knock-on effect of this process is the increase in wealth for South Africa as a whole from gold sales – but these efforts also support mines in their efforts to decrease their environmental footprint.”

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