



/OPERATIONS

# When size really does matter

The Tropicana plant site has a footprint spanning nearly 1 kilometre.  
*Photo taken by Karl Schoemaker.*

There is only one word to describe the processing plant at Tropicana and that is “big”, as the countdown continues to final commissioning in August this year.

Based on a comminution circuit comprising two-stage crushing, high pressure grinding rolls (HPGRs) and ball milling, along with a conventional carbon-in-leach circuit, the process plant footprint spans nearly 1 kilometre.

While it will have a nameplate capacity of 5.5 million tonnes per annum over its current 10-year life, during the first three years of operations to the plant has the potential to process up to 6.5 Mtpa based on a 5.8 Mtpa design throughput rate, ranking it as one of Australia’s largest gold producers. Gold production in the first three years will be between 470,000-490,000 ounces per annum.

This increased rate in the early years of operations reflects the Tropicana Joint Venture’s strategy of processing higher grade ore during the project payback period.

During this time, higher grade transitional ore of 3 grams per tonne will be treated before the head grade drops back to 2.01 g/t as mining moves into fresh or oxide ore. At this point in time the mine will produce between 320,000-350,000 ozpa.

The plant will also be home to one of the world’s largest ball mills with 14 megawatts of installed power.

To put its size into perspective, the ball mill will span a width of 7.3 metres, a length of 13m and will require charging with 600t of steel grindingballs pre-commissioning.

The use of HPGRs represents a more energy efficient option capable of producing a much finer grind sized product than conventional crushing.

Comprising a fixed and floating roll, the HPGRs are 2.2m in diameter and weigh 80t each.

The CIL circuit will comprise eight tanks, two leaching and six adsorption tanks, each capable of holding four million litres of slurry.

TGM’s Manager: Processing Mike Di Trento and his team are preparing for the transition from construction to operations. With dry commissioning due to start this month, followed by wet commissioning shortly thereafter, recruiting operators has been the recent priority.

By April, Mike would have brought on board an additional 33 personnel, bringing the total plant workforce to 38, based on an eight day on and six day off roster with five people working a shift.

“We are at the pointy end of the recruitment process now and while challenging initially, the market has moved and we have been able to bring on board a number of high quality external candidates,” he said.

Making up the balance of numbers are trainees (see separate article on page 8) and transfers from the Sunrise Dam Gold Mine.

Having assisted with the plant design during the initial stages, the next step for Mike and his team will be supporting dry and wet commissioning before the ultimate handover from the construction contractor, followed by commissioning and ramp-up in August.

“The big thing about the processing plant is that it has been designed to work in an integrated fashion with the rest of the mine, enabling direct tipping of ore which in itself will require a lot of integrated scheduling,” Mike said.

Hand-in-hand with this will be leading edge process control systems, advanced alarm management systems and multiple cameras feeding into a state-of-the-art operations centre.

The design of the operations centre is nearing completion and once finalised, will house both the mining and process control teams.

“So we will be effectively controlling the whole mine from one location which has led to a strong focus on whole mine integration,” he said.