

# **VAT LEACHING GOLD EXTRACTION**

## **HOW DOES THIS WORK?**

Vat leaching can be described as leaching (draining from soil) in a bathtub. In Vat leaching the ore, usually after size reduction, is manually loaded into the vats. Vats are tanks built by bricks & cement and may be rectangular or circular with a partial filter floor. Vat leaching can be operated in a batch fashion or but continuously.

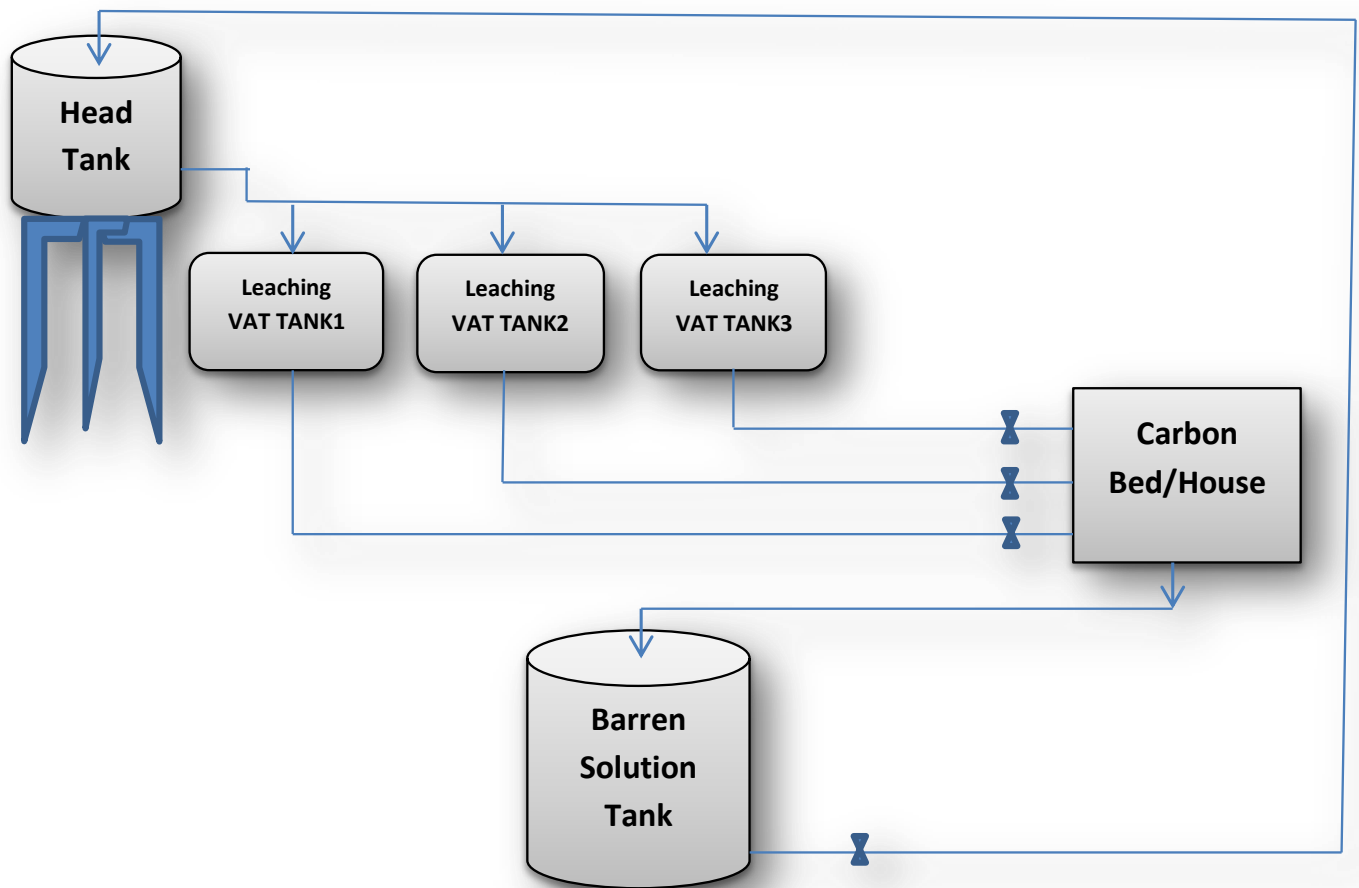
Once Vats are loaded with ore, they are flooded with a leaching solution mainly of a desired cyanide concentration at ambient operating conditions through the filter section of the floor.

These sharp injections of the leaching solution accelerate dissolution of the gold due to the dynamic contact between the cyanide solution and solid ore particles. After passing through the ore, the solution is drawn off through the filtered floor via PVC pipes equipped with valves for solution flow rate control. It can either recycled back into the vats or taken to the next step of the recovery process. This is determined by checking gold content in solution drawn from the vat by carrying out a Color Test.

The pregnant solution from vats is taken to the next step of recovery which is gold adsorption to carbons. The solution is passed through a carbon bed which can either be a cemented basin with several chambers or carbon columns.

Once carbons are saturated (cannot absorb more gold), they are manually offloaded and packed in bags and transported to a stripping facility, Elution plant. Here a process called Electro winning is used to strip out the gold. Precipitate from the process is rinsed several times and the dried solids mixed with fluxes before smelting so as to remove them from gold. The smelted material becomes the gold bar, is weighed and secured ready for selling.

## Sketch - Vat leaching Process Flow Diagram



✚ A facility that is currently operational is available, & accessible, for a site visit.