



Uranium Beneficiation Project

Project Category: Testwork and Design

Client: Confidential

Location: Zambia

Capacity: 1 million lbs U_3O_8 per annum

Commodity: Uranium



Scope of Work

OMC's scope of work included the definition and management of the ore characterisation testwork, interpretation of the testwork results, optimal circuit configuration and indicative equipment sizing. OMC also provided input into the continuous pilot plant operation. The challenge presented to OMC was to maximise the scating rate while minimising the U_3O_8 losses.

Flowsheet

The flowsheet consists of a primary crusher, scrubber with recycle crusher, screening and washing / dewatering circuit. A specific feature of the flowsheet is that the scrubber also acts as the primary leach vessel.

Outcomes

- The Mutanga mineralisation is within the Escarpment Grit Formation of the Upper Karoo Supergroup in Zambia. It consists of sandstones and siltstones with the uranium mineralisation occurring on the surface of the sand particles. This poses the potential to scrub the U_3O_8 off the particles and scating the barren sand, thus increasing the grade to the downstream process significantly.
- OMC specified a testwork program that included ore characterisation, scrubber testwork at varying power input and assay data on the different particle sizes to determine the deportment of uranium.
- Testwork data was interpreted and flowsheet options developed to achieve scating rates in excess of 70%, at high uranium recovery and a significant upgrade of the hydrometallurgical plant feed.
- The major equipment was then sized to allow for the production of one million pounds of U_3O_8 per annum.