

KANSANSHI COPPER & UPGRADE PROJECTS



Client:	First Quantum Minerals
Location:	Solwezi, north west Zambia
Capacity:	80,000 t/a cathodes and 60,000 t/a of sulphide product
Product:	Copper cathode and sulphide products
GRD Minproc Office:	Perth, Western Australia
Start Date:	May 2003
Completion Date:	January 2006
Project Duration:	21 months
Contract Basis:	EPCM
Project Value:	USD 200,000,000



Scope of Work

Design, supply, installation and commissioning of process plant, tailing system, plant buildings and infrastructure. The process plant includes oxide circuit crushing, milling, flotation, leaching, CCD and SXEW.

The sulphide circuit includes milling, flotation, thickening and a filter press product and storage facility.

The plant was subsequently upgraded to increase the sulphide process by the addition of a ball mill, additional sulphide flotation, concentrate thickener and product filter, tailings thickener and augmented tailings line system.

Process

The Kansanshi Copper Plant treats copper-rich ores by two separate processes. The initial development of the plant has included both of these treatment routes. Common processing includes crushing and stockpiling of both oxide and sulphide ore.

- The sulphide circuit includes SAG mill grinding, flotation, regrinding, thickening and filtering to produce a stockpiled, dry copper concentrate product.
- The more complex oxide circuit includes SAG and ball mill grinding, flotation, atmospheric leach, counter current decantation (CCD) circuit, high and low grade solvent extraction (SX) and electro-winning (EW) to produce saleable copper cathode.

GRD Minproc was awarded the 2005 WA Engineering Excellence Award, International Projects and Exports, for the Kansanshi Copper project in Zambia.