

Project

LOCATION

Mauritania, West Africa

GEOLOGY TYPE

Archean and Lower Proterozoic terranes, metavolcanics

MINERAL

Gold

RESERVES

Proven and probable: 5.03M oz Measured and indicated: 9.25M oz (262.2t)

ANNUAL PRODUCTION

185,334oz (2012)

MINE METHOD

Open pit

EMPLOYMENT

About 454 (2009)

Tasiast Gold Mine, Mauritania

The Tasiast gold mine is located about 300km north of Nouakchott and 162km east-south-east of Nouádhbou in the north-western Mauritania. It is an open pit mine lying in a prospective greenstone belt.

Officially opened in July 2007, the gold mine began commercial operations in 2008. The gold equivalent production in 2009 was 158,657oz with a 336/oz cost of sale. Production in 2012 increased to 185,334oz.

In the fourth quarter of 2009, the processing capacity was expanded from 1m tons per year (mt/y) to 2.5mt/y. This expansion included improvements to the crushing circuit, and the addition of a CIL tank, a ball mill and a gold room.

In September 2010, Canadian gold mining company Kinross Gold (Kinross) acquired 100% ownership of the Tasiast mine from Red Back Mining. This takeover was part of a \$7.1bn acquisition of Red Back Mining by the metal producer.

The life of the mine is expected to run until 2030.

Kinross dismissed 300 workers at the Tasiast mine in December 2013 in a series of cost-cutting measures.

"Kinross has a mining lease permit in an area of 312km² for 30 years from 2004."

Geology of the Tasiast gold mine

The Tasiast mining reserve is spread over four Precambrian greenstone belts of the Reguibat shield. The core geology of the shield was formed during the Archean and Proterozoic periods and has been stable since 1,700 Ma.

The mineralisation is found in the Felsic Volcanics, Banded Iron Formation (BIF) and the mafic volcanoclastic rocks.

Kinross has a mining lease permit in an area of 312km² for 30 years from 2004. It also has five contiguous exploration permits in the Tasiast-Libzenia Domain.

The mine lies beneath the 70km x 15km Aouéouat greenstone belt in the Dakhet Nouádhbou and Inchiri districts. Gold occurs as sheared deposits along the strike and at depths. It is mined from a 4.5km strike Piment Zone and a 1.5km Greenschist Zone.

Tasiast gold mine reserves

The proven and probable reserves at Tasiast as of December 2012 stood at 149.65mt graded at 1.66g/t, which is equivalent to 7.96 million ounces of gold. Measured and indicated resources are estimated at 6.75 million ounces.

Mineralisation

Structurally controlled gold ore mineralisation is hosted in all the rock types with quartz-veining, discrete shears and faults, and silica-flooding.

Secondary pyrrhotite is found above a layer of brittle quartz-carbonate veining. The microfractures and veinlets of the main shears contain visible coarse gold.

Tasiast mining operations

The ore is being mined using conventional open pit methods. Separation of waste from the ore is done using selective mining techniques. The mining fleet includes several 120t hydraulic excavators and 90t trucks.

The project site is located in a remote area and does not have electricity grid. Three 2.7MW HFO generator sets generate electricity for mining, while eight 1MW diesel generators are available as spares.

Processing

The ore is treated using three stage crushing, ball milling and carbon-in-leaching (CIL). A heap leach facility is available to process the run-of-mine, lower grade oxide ore.

"Kinross planned to invest about \$1.5bn for the expansion of Tasiast mine by 2013 but deferred the plan until 2015."

The pre-leach thickened high-grade ore is processed by passing it through a six stage CIL circuit. An elute circuit extracts the gold from the ore onto wire wool cathodes through the electrowinning process. The loaded steel wool is smelted to produce the bullion product.

Building up of coarse gold in the higher grade primary ores process is prevented by installing a gravity circuit in the grinding circuit. The low grade oxide is processed in a run-of-mine heap leach facility.

MKS Finance, under a contractual agreement, ships the produced gold to Switzerland for refining at the Produits Artistiques Métaux Précieux (PAMP) gold refinery.

Expansion of Tasiast mine

Kinross planned to invest about \$1.5bn for the expansion of Tasiast mine by 2013. The expansion plan is, however, deferred until 2015 due to the decline in gold prices. The expansion will include construction of a new mill to increase the processing capacity from the current 10,000t/d to 38,000t/d.

The mining fleet will also be expanded accordingly. The prefeasibility study for the expansion was completed in the first half of 2013. Upon expansion, Tasiast will produce about 1m oz per year. The feasibility study for the expansion is currently in progress.



The Tasiast is an open pit mine in a prospective greenstone belt.



The Tasiast mining plant has a processing capacity of 2.5mt/y.



Kinross Gold acquired the Tasiast mine from Red Back Mining in September 2010.



Share





Kinross planned to invest about \$1.5bn for the expansion of Tasiast mine by 2013, but deferred the plan until 2015.



The mining fleet of Tasiast includes 120t hydraulic excavators and 90t trucks.



Commercial production at the mine began in 2008.

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