

# ASX ANNOUNCEMENT

## Maiden 760,000oz Ore Reserve for Zara Gold Project, East Africa



Chalice Gold Mines Limited ABN 47 116 648 956

4 June 2010

### Highlights

- Maiden Ore Reserve of 4.6Mt @ 5.1g/t for 760,000 oz for flagship Koka deposit at Zara Project, Eritrea
- Indicated Resources total 5.0Mt grading 5.3 g/t gold for 840,000 oz of contained gold.
- Feasibility Study nearing completion.



### INVESTMENT HIGHLIGHTS

High grade gold deposit  
(840,000 oz @ 5.3 g/t)

Feasibility study by July, 2010

Medium term production  
potential

Large underexplored ground  
position with potential for  
discovery of additional  
resources

[www.chalicegold.com](http://www.chalicegold.com)

**Chalice Gold Mines Limited (ASX: CHN)** is pleased to announce a maiden ore Reserve of 760,000 ounces for the Koka Gold Deposit, part of its 80%\* owned Zara Project in Eritrea, East Africa.

The statement has been compiled by independent consultants, AMC Consultants Pty Ltd ("AMC"), and incorporates data from 139 diamond drill holes totalling ~23,000m.

The new resources and reserves statement is a critical component of the Feasibility Study currently being conducted by independent consultants Lycopodium Minerals, AMC and Knight Piésold. The Feasibility Study will be completed in July 2010.

AMC Consultants Pty Ltd ("AMC") has completed Mineral Resource and Ore Reserve estimates for Chalice for the Koka Gold Deposit in Eritrea as at 1 June 2010, as detailed below.

\* Chalice holds an 80% interest in the project and has an option to acquire the remaining 20% held by Dragon Mining Limited (ASX: DRA).

## 1. MINERAL RESOURCE

The Mineral Resource estimate, classified and reported in accordance with the JORC Code<sup>1</sup> is listed in Table 1. Mineral Resources are reported inclusive of Ore Reserves.

Category	Tonnes (Mt)	Grade (g/t Au)	Contained Gold (Oz)
Indicated Resource	5.0	5.3	840,000

**Table 1: Koka Gold Deposit Mineral Resource Estimate as at 1 June 2010  
Reported at 1.2 g/t Au Cut-Off**

The Mineral Resource estimate is based on inclined diamond drill holes drilled on sections spaced at 40m over the strike length of the deposit and 20m over the central part. Drill hole spacing on sections is 20m to 40m. Drill holes completed to February 2010 were used for the estimate.

Diamond drill-core was sampled on one metre intervals over intersections of the microgranite that hosts gold mineralisation. Sample preparation was carried out by a contract laboratory in Asmara, Eritrea, and assays completed by an accredited assay laboratory in Perth, Western Australia.

The assay data are supported by an assay quality control programme that includes certified reference materials, blanks and repeat assays.

The Mineral Resource estimate was developed based on interpretation of the host microgranite and within that interpretation of overlapping gold and sulphide-bearing domains. A probability model was used to assist with the interpretation of mineralisation continuity. The probability model was created by assigning an indicator to sample intervals where gold grade was above 0.3 g/t Au and total sulphide content exceeded 1%. The indicator values were estimated into a model within the microgranite envelope. The gold and sulphide domains were combined into one mineralisation domain for grade estimation.

Assays within the domains were selected and composited to 2m. A topcut of 200 g/t Au was applied to the composites within mineralisation domains.

Gold grade was estimated using ordinary kriging with parameters based on a study of variography. The block model parent cell dimensions were 10m in easting and northing directions and 5m in RL. Grades were estimated into parent cells, with all subcells receiving the same grade as its parent. The maximum number of composites allowed for each estimate was 30, with estimation of most cells within the mineralisation domain completed with 30 composites.

A dry bulk density of 2.74 t/m<sup>3</sup> was applied to the model based on averaging of bulk density measurements from drill-core.

Resource classification was set in two passes, using some of the estimation parameters for the first pass, then rationalised section by section. The final classification resulted in all of the mineralisation domain being classified as Indicated Resource, due to the proximity of drilling, the number of samples used in the estimate and the confidence in the interpretation. None of the estimate was classified as Measured, as the estimate is very sensitive to changes in the estimation parameters.

The microgranite outside the mineralisation domain is classified as Inferred Resource although none of this estimate reports above a 1.2 g/t Au cut-off.

<sup>1</sup> Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code 2004 Edition, Effective December 2004, Prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

AMC checked the estimate in the following ways:

- Visual comparison of drill hole assays with block model grades on a section by section basis.
- Block model volumes cross-checked against wireframe volumes.
- Average composite and estimated gold grades were plotted against northing and RL to confirm local estimation accuracy.

## 2. ORE RESERVE

The Koka Gold Deposit Ore Reserve estimate, classified and reported in accordance with the JORC Code, is listed in Table 2. This is the first Ore Reserve estimate reported for the Koka Gold Deposit.

Category	Tonnes (Mt)	Grade (g/t Au)	Contained Gold (Oz)
Probable Reserve	4.6	5.1	760,000

**Table 2: Koka Gold Deposit Ore Reserve Estimate as at 1 June 2010**

The Mineral Resource model used as the basis for the Ore Reserve estimation was developed by AMC.

The Ore Reserve is that part of the Mineral Resource which can be economically mined by open pit mining methods. Dilution of the Mineral Resource model and an allowance for ore loss was included in the Ore Reserve estimate. All the Indicated Mineral Resources intersected by the open pit mine design were classed as Probable Ore Reserves after consideration of all mining, metallurgical, social, environmental, statutory and financial aspects of the Koka project. There is no Measured Resource in the open pit mine design. Ore Reserves are included in the Mineral Resource estimate.

The impact of mining on the anticipated ore tonnage and grade was analysed by considering the impact of reblocking the resource model at the selective mining unit size suitable for the equipment being considered for the orebody. A minimum block size of 5m in easting and northing directions and 2.5m in RL was used for a 120t type excavator. The result of the dilution and ore loss process was adding 15% dilution material and 5% ore loss.

The slope angles used in the Ore Reserve estimation were based on work by AMC that used core logging information collected from exploration and geotechnical diamond drillholes as well as material property data collected from laboratory tests. The overall slope angles vary between 45° and 48°.

The pit limits for the open pit were selected through analysis using the Whittle Four-X implementation of the Lerchs Grossman algorithm. The pit optimisation considered Indicated Mineral Resources only.

The following ore related parameters were used in the optimisation:

- Process and administration cost of US\$33.49/t processed assuming a 0.5 Mtpa processing rate.
- A metallurgical recovery of 96.2%.
- A gold price of US\$900/oz.
- A government royalty of 5% of revenue.
- The treatment plant breakeven cut-off grade was estimated as 1.26 g/t Au.

The processing and administration cost was developed by Lycopodium as part of the scoping study completed in 2009.

Metallurgical testwork was conducted by Australian Metallurgical and Mineral Testing Consultants in Perth, Western Australia in 2009 under supervision of Lycopodium Minerals Limited ("Lycopodium"). The 96.2% recovery factor is based on a head grade of 5 g/t Au.

The Ore Reserve is the contents of a pit design, above a cut-off grade of 1.26 g/t Au that was developed based on the optimisation results.

The key inputs to the Ore Reserve estimation and the source of information on the modifying factors are listed in Table 3.

<b>Factor</b>	<b>Responsible Group</b>
Geology	Chalice
Resource model	AMC
Mining geotechnical	AMC
Mining	AMC
Processing and metallurgical	Lycopodium
Economic	Lycopodium/Chalice
Legal	Chalice
Environmental	Knight Piesold
Social/Government	Chalice

**Table 3: Ore Reserve Modifying Factors**



DR DOUG JONES  
Managing Director

04 June 2010

### **About the Zara Gold Project**

The Zara Joint Venture comprises four Exploration Licenses and two Prospecting Licenses covering an area of 615km<sup>2</sup> situated in northern Eritrea, approximately 160km northwest of Asmara city (Figure 1). Chalice holds an 80% interest in the project and has an option to acquire the remaining 20% held by Dragon Mining (ASX: DRA).

### **Competent Persons' Statement**

The Resource Estimate was prepared by Mr. John Tyrrell who is a Member of the Australasian Institute of Mining and Metallurgy. Mr. Tyrrell is a full time employee of AMC and has sufficient experience in gold resource estimation to act as Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code)'. Mr. Tyrrell consents to the inclusion of this information in the form and context in which it appears.

The information in this statement of Ore Reserves is based on information compiled by Mr David Lee who is a Member of the Australasian Institute of Mining and Metallurgy and a full time employee of AMC. Mr Lee has sufficient relevant experience to be a Competent Person as defined in the JORC Code. Mr Lee consents to the inclusion of this information in the form and context in which it appears.