



# Condor Gold plc

7<sup>th</sup> Floor  
39 St. James's Street  
London  
SW1A 1JD  
Telephone +44 020 74081067  
Fax: +44 020 74938633

7.00am on 20 October 2015

**Condor Gold plc**  
("Condor" or "the Company")

## **Whittle Consulting's Optimisation Study Significantly Enhances Economics**

Condor (AIM:CNR), is pleased to announce the results from Whittle Consulting Limited's ("Whittle") Enterprise Optimisation study on La India Project, Nicaragua (the "Study"). The optimisation involves the application of advanced analytical techniques to construct a model of the operation from the ore bodies through mining and ore treatment processes to products sold to the market with a view to maximising a project's economics. The study used the reserves/resources and technical studies used in the NI 43-101 compliant Pre-Feasibility Study ("PFS") and Preliminary Economic Assessments ("PEA") produced by independent mineral resource and mining consultants SRK Consulting Limited ("SRK") in December 2014.

### **Highlights of Optimisation Study:**

- **22% increase in average gold production for the first 5 years, ranging from 91,000 oz to 165,000 oz gold per annum across three production scenarios**
- **The object of the optimisation is to bring forward future cashflows**
- **29% increase to 866k oz gold from 674k oz gold of contained gold of Indicated ounces only in the base case La India open pit, as the pit pushes deeper**
- **29% increase to 1,066k oz gold from 827k oz gold contained gold of Indicated and Inferred ounces within La India open pit + two feeder pits**
- **18% increase to 1,544k oz gold from 1,313 oz gold of contained gold of Indicated and Inferred within all pits and underground**
- **The model shows payback improves to 2-3 production years across three production scenarios**
- **The recovered gold over life of mine ranges from 796,000 oz to 1,437,000 oz gold across the 3 production scenarios**
- **All in sustaining cash costs remain under US\$700 per oz gold for all production scenarios**

### **Mark Child CEO comments:**

"The results of the optimisation study are extremely positive. Indicated ounces of gold within the main La India open pit increase by 29% to 866k oz gold as the pit pushes deeper. Contained gold within the pit shells increases 29% to 1,066k oz gold for the main pit and feeder pits. The annual gold production for the first 5 years increases on average 22% and ranges from 91,000 oz gold to 165,000 oz gold per annum versus the PFS and PEA studies. All in sustaining cash costs remain

under US\$700 per oz gold. The recovered gold over life of mine ranges from 796,000 oz to 1,437,000 oz gold. The average pay back of upfront capital costs is between two and three production years, highlighting the outstanding economics and versatility of La India Project.

The optimisation study commenced in May 2015 to maximise the economics for four production scenarios at La India Project by bringing forward future cashflows and increasing production ounces. The main optimisation mechanisms applicable to the La India Project are: variable cut-off grade, stockpile use, grind-throughput-recovery, optimised pit and phasing, and multi-mine scheduling”

## **Background**

Whittle Consulting’s (Whittle) Enterprise Optimisation is an integrated approach to maximising the economics of a mining business by simultaneously optimizing 10 different mechanisms across the mining value chain. Condor commissioned the independent optimisation study in May 2015 to investigate strategic options to improve project economics. The Study is a strategic planning tool and is not NI 43-101 compliant. However, Whittle is the recognised world leader in a specialist field of maximising the economics of a mine and has completed work for major mining companies: Rio Tinto, Anglo American, Kinross, AngloGold Ashanti, Barrick, Xstrata, Vale.

Four production scenarios were assessed, based on the study methodology employed by SRK and Condor.

- The PFS case includes measured and indicated material only from the La India open pit, with a processing capacity of 0.8 million tonnes per annum (mtpa) or 2,200 tonnes per day (tpd).
- The PEA 1.0 case also includes the La India open pit inferred material, with a process capacity of 1.0 mtpa or 2,800tpd
- The PEA 1.2 case includes all of the La India open pit material, and also includes material from two nearby smaller pits, America and Central Breccia. The processing capacity for this case is 1.2 mtpa or 3,300tpd. This is known as scenario “A” in the SRK reports.
- The PEA 1.6 case adds underground mining from La India and America, over and above the material in PEA 1.2. The processing capacity for this case is 1.6 mtpa or 4,400tpd. This is known as scenario “B” in the SRK reports.

Validation runs for each case were produced. Optimised runs were generated using multi-mine scheduling, fully variable cut-off grade and stockpiling. Reduced capacity cases were run, also optimised for schedule, cut-off grade and stockpiling. Grind-throughput-recovery relationships were developed for the La India open pit material, and this methodology was used to further optimize the schedule for all cases. Pit and Phase optimisation was completed on the La India pit using the Enterprise Optimisation economics.

The optimised cases were developed from work done from May 2015 through to September 2015. The gold price for this work is \$1,250 per troy ounce, and the silver price is \$19.75/troz in order to have a like for like comparison with the PFS and PEAs. Metal recoveries were based on the PFS and PEA work completed in late 2014.

The Enterprise Optimisation methodology included the Grind-Throughput-recovery (GTR) work being isolated to La India Vein Set only due to limited metallurgical data on the America and Central Breccia. Similar results may be recognized when data is collected and assessed for the America and Central Breccia open pit and underground material. It is important to note that the 1.0 mtpa case does not have a PFS/PEA study equivalent, nor corresponding pit designs, so there

is no comparison data. In these cases, improvements are measured against the initial Enterprise Optimisation calibration runs.

**Table 1. Comparison of optimisation production scenarios to PFS and PEAs**

	La India - PFS		La India	All Open Pits		All Open Pits + UG	
	Open Pit - PFS IND Only		Open Pit IND+INF	PEA-A IND+INF		PEA-B IND+INF	
	PFS	Whittle EO	Whittle EO	PEAA	Whittle EO	PEAA	Whittle EO
Nominal Processing Plant capacity tpd	2,200		2,800	3,300		4,400	
Nom. Capacity in M-tpa	0.8		1.0	1.2		1.6	
Contained gold koz	674	866	955	827	1,066	1,313	1,554
Recovered gold koz	614	796	882	752	985	1,203	1,437
1 <sup>st</sup> 5 years avg. production gold p.a. koz	76	91	101	94	118	138	165
Production improvement 1 <sup>st</sup> 5 years		20%	n/a		25%		20%

The initial optimised schedule for the PFS 0.8 mtpa / 2,200 tpd case, utilizing fully variable cut-off grade and a maximum of 1.5 mt of stockpiling. The grind-throughput-recovery methodology improves economics over the prior case due to faster/coarser grinding and reduced costs. The Enterprise Optimisation net value economics generate a larger pit and higher early value phases. Whilst this exercise did generate a larger pit with more ounces, it should be stressed that this is not at a PFS level of study.

The PEA 1.2 “A” case, includes all Measured, Indicated & Inferred material from all three pits, with a nominal processing capacity of 1.2 mtpa (3,300 tpd). There are two cut-off grade and stockpile optimised Prober schedules for reduced processing rates. Cut-off grade and stockpiling improves economics over the PEA A case, and GTR adds to the economics. Overall, the Enterprise Optimisation methodology significantly improved cashflows for the PEA “A” 1.2.

The PEA 1.6 “B” case includes all of the open pit material available, plus a scoping study view of underground resource from the La India and America deposits, with a nominal processing capacity of 1.6 mtpa / 4400 tpd. For the PEA 1.6 “B” case, the cut-off grade and stockpile schedule improves economics over the base, and the GTR case adds ounces. The GTR approach had less impact in this case as only the La India material has sufficient information for GTR analysis. With the addition of the Central Breccia (CBZ) material, the America pit material, and the higher grade underground material, there is proportionally less material eligible for this methodology. The Enterprise Optimised economics-base pit and phase optimisation generated significant cashflow.

## Outcomes

This Enterprise Optimisation Study developed the optimised schedules through variable cut-off grade, stockpile capacity, grind-throughput-recovery, multi-mine scheduling, and optimised pit and phasing. Significant outcomes of this process include:

1. An optimised schedule utilizing fully variable cut-off grade with stockpiling adds significantly to greater production ounces and enhanced cashflow in all cases.

2. The permitted maximum stockpile capacity of 1.5Mt should be utilized, and additional stockpile capacity may increase cashflows and production ounces
3. The grind size-throughput-recovery (GTR) methodology adds significant improved cashflow and production ounces to the project in all cases where it can be utilized.
4. Modification of the ultimate pit and phase selection based on the methodology presented here increases cashflows significantly in all cases, partially due to incorporating additional tonnes and ounces.
5. The theory of constraints indicates using US Dollar per kilowatt hour as the limiting factor in the business system will improve value. The Enterprise Optimised pit and phase optimisation based on this, combined with cut-off and GTR optimisation adds significantly to enhanced economics of the project.
6. When additional mining material is added, processing capacity may not necessarily need to be increased.

The Enterprise Optimisation methodology as applied in this study was able to pull cash flow forward.

### **Conclusion**

Overall, the independent optimisation analysis conducted by Whittle clearly demonstrates the potential to unlock substantial additional production ounces and cashflows from the La India Project. Across 3 production scenarios, the model shows production ounces and cashflows could be increased substantially. The payback on upfront capital costs reduces to between two to three production years, and gold production increases on average 22% for the first 5 years. Whittle's study is a strategic planning tool, which is used to maximise the economics, ahead of a "build decision" and can often form part of a more detailed Definitive/Bankable Feasibility Study. It should be noted that Whittle's study is not NI 43-101 compliant and would require re-generation of the PFS and PEAs to confirm the improvements.

### **Whittle Consulting Limited**

Whittle Consulting's (<http://www.whittleconsulting.com.au>) approach to Enterprise Optimisation involves the application of advanced analytical techniques to construct a model of the operation from the ore bodies through mining and ore treatment processes to products sold to the market. Once modelled, a powerful mathematical optimiser is applied to manipulate the variables which are regarded as "negotiable", to develop long-term plans that excel in terms of a wide range of economic and other operational and business criteria. All the mechanisms required for this study have been implemented before – most of them on a routine basis. Because Condor is in an Offer Period as defined under the Takeover Code, any NPV numbers have to be provided by an Independent Valuer for the purposes of Rule 29 of the Takeover Code. Whittle, who were retained before the Offer Period, has acted as an independent optimisation consultant and not as an Independent Valuer and therefore NPV numbers are excluded from this announcement. The Company will consider releasing NPV figures in due course and if then in an Offer Period, fully in accordance with the requirements of Rule 29.

Whittle's Enterprise Optimisation study on Condor was prepared by Richard Peevers (B.A. (Geology), MBA (Finance), M.Eng. (Civil), Registered Professional Civil Engineer California). Richard holds degrees in geology, engineering, and business administration and has managed copper, gold, borate, and nickel optimisation studies for Whittle Consulting.

### **Competent Person's Declaration**

Information in this announcement that relates to the project evaluation, Preliminary Feasibility Study, engineering and mine planning is based on information compiled and/or reviewed by Gerald David Crawford, the Chief Operating Officer, who is a Registered Professional Engineer in the states of Colorado and Nevada and member of the Society of Mining, Metallurgy and Exploration, and a mining engineer with 38 years of experience in the design and evaluation of precious and base metal mineral resources. Mr. Crawford is a full-time employee of Condor Gold plc and has sufficient experience which is relevant to the mining method and type of deposit under consideration, and to the type of activity which he is undertaking to qualify as a Qualified Person as defined under Canadian NI 43-101. Mr. Crawford consents to the inclusion in the announcement of the matters based on their information in the form and context in which it appears and confirms that this information is accurate and not false or misleading.

### **Technical Glossary**

\$/kWhr	Dollars per kilowatt-hour, one means of optimizing mill throughput. Mills are frequently a bottleneck / constraint in improvement of net present value
CBZ	Central Breccia deposit, a near surface inferred resource located about 2km to the northeast of the La India Pit
CDR	Whittle's abbreviation for the Condor project
COG	Cut-off Grade - a grade of gold in ore that segregates ore from waste or stockpile material. One of the variables that Prober manipulates to improve NPV
Constraint	A term from Linear Programming, any attribute of a cash flow and operating cost model that serves to limit increases in the net present value of the system
Enterprise Optimisation	Enterprise Optimisation - Whittle terminology for 'Whole Mine' optimisation
GTR	Grind- Throughput- Recovery- - Prober optimisation of the grind size, gold recovery and mill throughput variables in the EO process
LP	Linear Programming - A mathematical technique used to optimize a process subject to a set of constraints
mtpa	Million tonnes per annum (metric tonnes)
NPV	Net Present Value
P&P	Pit and Phase - Whittle optimisation of the ultimate pit shell and all contained phases to achieve maximum NPV using EO net value economics
PEA	Preliminary Economic Assessment - A conceptual-level study used to demonstrate basic economic viability under Canadian National Instrument 43-101
PFS	Preliminary Feasibility Study - Overall economic accuracy of +/- 25%
Prober	The proprietary software package used by Whittle Consulting Ltd. to implement Enterprise Optimisation
Stockpile	A means of controlling the grade of material sent through the mill, whereby higher grades are given preferential treatment, particularly when a surplus of ore is available within any mining period.

Theory of Constraints	All production processes are limited by any number of factors, such as advance rate within the mine, truck capacity, or power that can be applied through the SAG mill (for example). Prober uses these constraints to eliminate unworkable scenarios, solving for the maximum NPV achievable within the constraints
tr.oz	Troy Ounce, standard transaction unit for gold and silver sales, at 31.1031 grams per troy ounce.
UG	Underground Mining
Validation Run	The initial test of the Whittle cash flow model and fixed-mining Prober run that ensures that pre-optimisation economics calculated by Whittle agree with existing PFS and PEA results

**- Ends -**

For further information please visit [www.condorgold.com](http://www.condorgold.com) or contact:

Condor Gold plc	Mark Child, Executive Chairman and CEO +44 (0) 20 7408 1067	Luc English, Country Manager Nicaragua +505 8854 0753
Beaumont Cornish Limited	Roland Cornish and James Biddle +44 (0) 20 7628 3396	
Numis Securities Limited	John Prior and James Black +44 (0) 20 72601000	
Farm Street Media	Simon Robinson +44 (0) 7593 340107	

#### **About Condor Gold plc:**

Condor Gold plc was admitted to AIM on 31<sup>st</sup> May 2006. The Company is a gold exploration and development company with a focus on Central America.

Condor completed a Pre-Feasibility Study (PFS) and two Preliminary Economic Assessments (PEA) on La India Project in Nicaragua in December 2014. The PFS details an open pit gold mineral reserve of 6.9M tonnes at 3.0g/t gold for 675,000 oz gold producing 80,000 oz gold p.a. for 7 years. The PEA for the open pit only scenario details 100,000 oz gold production p.a. for 8 years whereas the PEA for a combination of open pit and underground details 140,000 oz gold production p.a. for 8 years. La India Project contains a total attributable mineral resource of 18.4Mt at 3.9g/t for 2.33M oz gold and 2.68M oz silver at 6.2g/t to the CIM Code.

In El Salvador, Condor has an attributable 1,004,000 oz gold equivalent at 2.6g/t JORC compliant resource. The resource calculations are compiled by independent geologists SRK Consulting (UK) Limited for Nicaragua and Ravensgate and Geosure for El Salvador.

#### **Consent by Whittle Consulting**

Whittle Consulting hereby accepts responsibility for the information extracted from the Enterprise Optimisation study prepared for the Company dated 19 October 2015 (and which study adopted the economic and other technical assumptions provided by Condor Gold plc and SRK Consulting (UK) Limited) as contained in this announcement. Furthermore, Whittle Consulting consents to the use of its name in this announcement.

**Disclaimer**

Neither the contents of the Company's website nor the contents of any website accessible from hyperlinks on the Company's website (or any other website) is incorporated into, or forms part of, this announcement.

Whittle Consulting is acting exclusively for Condor Gold plc and no one else in connection with the Enterprise Optimisation study and will not be responsible to anyone other than Condor Gold plc for providing the protections afforded to clients of Whittle Consulting. Neither Whittle Consulting nor any of its affiliates owes or accepts any duty, liability or responsibility whatsoever (whether direct or indirect, whether in contract, in tort, under statute or otherwise) to any person who is not a client of Whittle Consulting in connection with this Announcement, any statement contained herein, or otherwise.

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The Directors of the Company accept responsibility for the contents of this announcement.

A copy of this announcement will be posted to Shareholders and made available, subject to certain restrictions relating to persons resident in restricted jurisdictions, on Condor Gold's website ([www.condorgold.com](http://www.condorgold.com)), under the "Investor Relations" section no later than 12 noon on 21 October 2015.