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SPECIALISTS FROM BOARDROOM TO MINE FACE

La Arena Project, Peru

Technical Report

Prepared by Coffey Mining Pty Ltd on behalf of:

Rio Alto Mining Limited and Mexican Silver Mines Limited

Effective Date: March 31, 2008

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RSG Global has merged with Coffey Mining Pty Ltd

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Document Review and Sign Off

[signed]
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Table of Contents

List of Tables

List of Figures

1 SUMMARY

1.1 Introduction

Coffey Mining has been commissioned by Rio Alto Mining Limited (Rio Alto), a privately owned company incorporated under the laws of British Columbia, to prepare an Independent Technical Report of the La Arena gold-copper project (La Arena Project) in Peru. This report is also prepared for Mexican Silver Mines Limited (MSM) as potential acquirer of Rio Alto. MSM is a reporting issuer in the Provinces of Alberta and British Columbia whose common shares are listed for trading on the TSX Venture Exchange and that Rio Alto and MSM have entered into a letter agreement which sets forth the basic terms and conditions for the acquisition of Rio Alto by MSM. Rio Alto will become a wholly-owned subsidiary of MSM as a result of the acquisition.

1.2 Property Description and Location

The La Arena Project is located in northern Peru, 480km NNW of Lima, Peru, in the Huamachuco District. The project is situated in the eastern slope of the Western Cordillera, close to the Continental Divide at an average altitude of 3,400 metres above sea level. The region displays a particularly rich endowment of metals (Cu-Au-Ag) occurring in porphyry and epithermal settings, including the Lagunas Norte mine at Alto Chicama, the Comarsa mine, La Virgen mine, Shahuindo exploration project and Tres Cruces development project.

1.3 Ownership

The La Arena copper and gold deposit was discovered in December 1994 and in January, 1995, Cambior initially staked a 1,800 hectares claim group. Since 1994, Cambior and later Iamgold, staked additional claims and the total area of the La Arena claims now total 20,673 hectares.

Cambior was acquired by Iamgold in November 2006 and Iamgold decided to sell La Arena. To effect the sale 44 mining concessions totalling 20,673 hectares were transferred by Iamgold to a new Peruvian company, La Arena SA and these concessions are fully owned and registered to La Arena SA.

In addition to the La Arena Project, the property includes several prospects, i.e. Cerro Colorado, El Alizar porphyry, Agua Blanca epithermal and porphyry, Pena Colorado and La Florida.

Rio Alto Mining Limited has the right to acquire La Arena S.A. pursuant to the terms of a letter agreement with Iamgold Quebec Management Inc. MSM is looking to acquire Rio Alto.

1.4 Geology and Mineralisation

The regional geology comprises Tertiary Calipuy Group arc volcanics covering the western sector, folded and faulted Mesozoic sedimentary sequences in the eastern sector, Precambrian and Paleozoic basement to the east and coastal batholith to the west. The dominating structural grain of the region trends NW-SE. Two other structural trends are developed in NE-SW and N-S directions. Several deposits and geochemical anomalies are associated with the intersection of these structures.

The La Arena deposit occurs as Au-Ag mineralisation within a Mesozoic quartzite cap to a Tertiairy porphyry Au-Cu intrusion. Mineralisation is developed in five major areas of the deposit, namely Calaorco Breccia and Ethel Breccia, both epithermal gold oxide, and North Porphyry, South Porphyry and Dacite Breccia, mainly primary and secondary Au-Cu. The quartzite-sandstone sequence that hosts the Calaorco Breccia dips moderately to the east. The porphyry complex has been interpreted to dip steeply to the east and display an upward flaring geometry. It contains several vein types, which are predominantly early "A" type quartz veins, "B" type quartz-sulphide veins and subsequent "D" type pyrite veins.

Possible alternative interpretations of the dominant mineralised trends have been postulated: sub-vertical control in the form of NE trending breccia-fracture systems for the Calorco Breccia and vertical cylinders or cupolas and clustering for the porphyry complex. Infill drilling and structural studies are required to determine the detailed geometries of the various mineralised systems.

1.5 Status of Exploration

Most exploration has been focused on the La Arena deposit. The principal methods used for exploration drilling at La Arena have been diamond core drilling (DDH) and reverse circulation percussion drilling (RC). The accumulated drilling over the La Arena deposit area reached 59,991m in 351 holes. In addition, 60 surface trenches were completed, totalling 4,120m in length. There has been no further exploration at La Arena since the first half of 2007.

In addition to the La Arena development project, the property includes several prospects that have been defined by a combination of soil geochemistry and limited exploration diamond drilling. (i.e. Cerro Colorado, El Alizar porphyry, Agua Blanca epithermal and porphyry, Pena Colorado and La Florida). Four anomalies have been identified at La Florida in the southern part of the property. Agua Blanca is both an epithermal (breccia) and porphyry (dacite) target.

1.6 Data Reliability

During the early exploration, data verification was done by company geologists, and little information on quality assurance and quality control procedures (QAQC) is available. Until the end of 2004 core samples were processed by CIMM Peru as the primary laboratory. Occasionally quality control samples were analysed by secondary laboratories but it is difficult to make an assessment of the results because no independent reference materials were included in the sample stream during that period.

From 2004 onwards, more rigorous QAQC procedures were followed and appropriately documented. Coffey Mining reviewed the results obtained for standards, blanks, rejects and duplicates to determine the accuracy and precision achieved by CIMM Peru and ALS Chemex since 2004

Drilling, surveying, geological logging, sample preparation and assaying procedures have been completed to accepted industry standard.

1.7 Mineral Resources

The La Arena resource estimate is based on the results of 340 diamond core holes (58,805m), 11 reverse circulation holes (1,186m), and 60 surface trenches (4,120m). The deposit has been drilled at a nominal spacing of 50m in the brecciated sandstone and 65m in the porphyry. The drilling includes a 5,500m program completed by Iamgold in 2007 targeting oxide mineralisation along the west side of the planned pit.

The Mineral Resource for the La Arena is given in Table 1.7_1. Resources are confined within an optimum undiscounted cashflow pit shell based on US$900/oz Au and US$16/oz Ag for copper-poor mineralisation largely in oxide sandstone (Cu < 300ppm) and a shell based on US$2.50/lb Cu and US$900/oz Au for copper-rich mineralisation largely in primary and secondary porphyry. These metal prices, although current, are higher than the more conservative prices used for Mineral Reserves estimation and put a suitable economic constraint to the Resource.

Table 1.7_1
La Arena Au-Cu Project
Mineral Resource (March 31st 2008)

Material	Cuttoff	Category	Tonnes (Mt)	Au Grade (g/t)	Cu Grade (%)	Ag Grade (g/t)	Au ('000 oz)	Cu ('000 t)	Ag ('000 oz)
Oxide	0.15g/t Au	Indicated	58	0.49	0.01	0.09	910		170
		Inferred	1.7	0.28	0.01	0.35	15		20
Secondary & Primary	0.1% Cu	Indicated	220	0.27	0.36		1900	790	
		Inferred	170	0.22	0.32		1200	540	

The average molybdenum grade is of the order of 40ppm. Although not included in the resources, recovery of Mo presents an economic opportunity of interest.

The estimation and classification of the resources by Coffey Mining are in accordance with the guidelines set out in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2004 as 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).

The resource classification is also consistent with criteria laid out in the Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects of December 2005 (the Instrument) and the classifications adopted by CIM Council in November 2004.

The reporting of resource classification under the JORC Code and the Canadian NI 43-101 systems are essentially identical, the notable difference being the requirement to report Inferred Mineral Resources separate from the totalled Measured and Indicated Mineral Resources under NI 43-101.

Jan Pieter de Visser, who is a member of the Australasian Institute of Mining and Metallurgy and has more than 15 years experience in the estimation of resources in gold-copper deposits, assumes responsibility for the resource estimate for the La Arena deposit. Jan Pieter de Visser is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code and CIM Standards respectively. Jan Pieter de Visser is a Director of Resource Perspectives Pty Ltd and completed this report on behalf of Coffey Mining of which he was an employee until 31 December 2007.

1.8 Mineral Reserve

As defined in National Instrument 43-101 the status of the La Arena Project is pre-feasibility study and sufficient work has been done to date to determine a Mineral Reserve.

All key physical and financial inputs have been reviewed by Coffey Mining and a pit optimisation using these updated parameters undertaken using Whittle software by Coffey Mining. The key input parameters used are shown in Table 1.8_1.

Table 1.8_1
La Arena Project
Coffey Mining Pit Optimisation Economic Parameters

Parameter		Dump Leach	Mill
Market Price		$750 per ounce Au / $1.95 per lb Cu	
Mining cost ($/t mined)	Sediment	$1.49 ore, $1.12 waste	$1.49 ore, $1.12 waste
	Porphyry	$1.49 ore, $1.12 waste	$1.49 ore, $1.12 waste*
Processing Cost ($/t Ore)		$2.22	$3.73
G & A Cost		$0.60**	$0.95
Mill Recovery	Au	65%	40%
	Cu	0%	88%
Slope Angles		45° for all	
Royalty		1.7%	
Calculated Cutoff Grades		0.18g Au/t***	0.10% Cu only

* Note that the mining cost was increased by $0.03/t for every 12m bench mined below elevation 3328mRL.
** Note the G&A cost assumed an ore processing rate of 13Mtpa when Whittle work was done.
*** Note for calculation and reporting of mineral reserves a cut-off of 0.2g/t for dump leach oxide gold was used.

The Mineral Reserve has been estimated including a 2% allowance for ore loss during mining and the following cut-off grades:

- For oxide ore with Cu<300ppm (dump leach feed) 0.2Aug/t
- For oxides with Cu>300ppm, secondary and primary sediments and porphyry (mill feed) 0.1%Cu.

The Probable Mineral Reserve, based on the Indicated Resource only, is summarised in Table 1.8_2.

Table 1.8_2
La Arena Project
La Arena Project Probable Mineral Reserve

Ore Type	Oxide Ore			Secondary Ore			Primary Ore			All Ore				
	Mt	g Au/t	%Cu	Mt	g Au/t	%Cu	Mt	g Au/t	%Cu	Mt	g Au/t	Oz Au	%Cu	000's lbs Cu
Sediments	29.5	0.62	0.01	0.1	0.34	0.32	0.1	0.45	0.18	29.7	0.62	586,886	0.01	1,032
Porphyry	4.3	0.49	0.16	13.0	0.36	0.52	127.4	0.30	0.40	144.8	0.30	1,414,689	0.40	1,273,861
Total	**33.9**	**0.61**	**0.03**	**13.1**	**0.36**	**0.52**	**127.5**	**0.30**	**0.40**	**174.4**	**0.36**	**2,001,575**	**0.33**	**1,274,910**

*Rounded numbers may not sum exactly.

The estimation and classification of the mineral reserves by Coffey Mining are in accordance with the guidelines set out in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2004 as 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).

The reserve classification is also consistent with criteria laid out in the Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects of December 2005 (the Instrument) and the classifications adopted by CIM Council in November 2004. The reporting of reserve classification under the JORC Code and the Canadian NI 43-101 systems are essentially identical.

Linton John Kirk, who is a fellow of the Australasian Institute of Mining and Metallurgy and has more than 30 years relevant mining experience, assumes responsibility for the reserve estimate for the La Arena deposit. Linton Kirk is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code and CIM Standards respectively. Linton Kirk is the Chief Mining Engineer for Coffey Mining.

1.9 Proposed Development and Operations

Rio Alto propose to proceed with a staged approach to the project, commencing mining and processing for the gold ore dump leach and once this is operational expand the project by mining and processing the copper ore.

Mining is proposed to be by conventional shovel and dump truck methods and to be similar to other relevant operations in Peru. Mining is planned to be on a two 12 hour shift 7 day per week basis using contract mining.

The dump leach will consist of a two stage pad leach operation, processing approximately 24,000tpd of oxide material, over 4 years for a total of approximately 30.2Mt of ore. Gold recovery is assumed to be 65% and gold production from the dump leach is estimated to total 385,000 ounces.

The primary and secondary sulfide ore along with any of the copper-rich oxide material that is not amenable to heap leaching will be milled onsite in a 24,000tpd per day flotation plant. It will consist of a crushing and grinding circuit generating an 80% passing 95 microns pulp that will be processed via a conventional flotation circuit with rougher, pre-cleaner, regrind and three cleaning stages to produce a copper-gold concentrate grading approximately 28% Cu at 88% recovery. Total gold recovery to the copper concentrate is approximately 40%. Total metal production for the milling circuit is expected to be 1.1 billion pounds of copper and 557,000oz of gold over a 17 year period.

The proposed tailings storage facility (TSF) will be a side of hill type facility. A downstream containment embankment will be constructed utilising mine waste. Tailings from the mill to the disposal site will be pumped at nominally 50% solids. At the disposal site the tailings will be further thickened to 65% solids. Tailings will be discharged via several open end discharges to form a sloped beach to the containment embankment.

The infrastructure required to support the La Arena Project includes site roads (access and re-route), campsite complex, administration building, warehouse, truck workshop, fuel and lubrication storage and dispensing, municipal works including potable water, fire water, sewage treatment, power distribution, telecommunication and security buildings.

1.10 Environmental and Social Considerations

B&G Engineering SAC has conducted an environmental and social due diligence evaluation in order to identify the existence of real and potential environmental and social risks for the Project.

B&G concluded that there are no "fatal flaws" or the existence of a major risk that could jeopardize the environmental or social viability of the Project.

The main environmental issues that may be considered intermediate risks are:

- The long term management of fresh water.
- The scope of the archaeological rescue plan.
- The time it takes to obtain licenses and permits from regulators.
- The long term management plan for acid rock drainage (ARD) for the sulfides in waste dumps and tailings.
- The costs associated with the closure of the mine.

B&G believe these risks can be mitigated by sound social and environmental policies together with professional management programs.

The main social aspects that can be considered as intermediate risks are:

- The need for ongoing relocation and acquisition of surface land from individual owners.
- The existence of mining operations located in the vicinity of the Project whose community management methods may affect the surface land acquisition as well as on how communities will perceive the project in relation to social and environmental demands.
- The expectations that the Project development will generate within the local population.

1.11 Project Implementation

At an early stage after Rio Alto has obtained funds Rio Alto will begin development of a detailed plan of all work required to be done as part of further drilling, metallurgical and other testwork, studies into all aspects of the project plus the detailed plan for the EIA that will need to occur.

Rio Alto is scheduling first ore to the dump leach in September 2010 and commissioning of the mill in January 2012 or 15 months after the start of the dump leach.

1.12 Financial Summary

The key assumptions used in the Rio Alto financial model include:

<u>Revenue</u>

- Copper at $2.00/lb.
- Gold at $750/oz.
- Silver at $12/oz, based on 30% of dump leach doré weight.
- No revenue allowed for molybdenum.

<u>Financing</u>

100% equity assumed.

<u>Taxes</u>

- 80% of Capex subject to IGV (VAT), refunded in following year.
- Worker's participation tax 8% of pre-income tax income.
- Income tax rate 30%.
- No withholding tax allowed.
- Peru government royalty varies from 1% to 3% of revenue net of allowed deductions.

Physicals – Production Basis

- Dump leach feed of 30.2Mt @ 0.61g/t Au.
- Mill feed of 144.2Mt @ 0.40% Cu and 0.30g/t Au.
- Dump leach mining and processing rate 8.64Mtpa from September 2010.
- Dump leach waste mining constant 12.2Mtpa.
- Mill feed rate of 8.4Mtpa, from January 2012.
- Mill waste mining rate constant 6.9Mtpa.
- Dump leach metallurgical recovery of 65% Au.
- Metallurgical copper recovery of 88% Cu and 40% Au to concentrate.
- Gold produced 942koz.
- Copper produced 1,079.9Mlb.

Capital Costs

- Total capital cost of $268M.
- Includes EPCM costs of mill and related infrastructure of 10% and overall 15% contingency.

Operating Costs

- Dump leach and mill ore mining cost $1.49/t.
- Waste mining cost $1.12/t.
- Dump leach processing cost $1.77/t.
- Mill processing cost $3.73/t.
- G&A cost of $3.5M/a for dump leach only, $9.7M/a for both dump and mill, $6.6M/a for mill only.

The primary results from the financial model are:

Cashflow (after tax)

- Maximum negative cumulative cashflow during mill construction in 2011 of approximately $160M.
- Cumulative cashflow positive from 2015.
- Total net cashflow of $645M in year 2028.

<u>Financial Results</u>

- After tax internal rate of return (based on 100% equity) 25%.
- Net present value (NPV) of $195M at a discount rate of 8%.
- Payback period, from start of mill, of 37 months.
- Cash cost gold (dump leach only) $428/oz.
- Cash cost copper (including gold credits) $0.85/lb.

Sensitivity analysis has been on all key variables including metal prices, metallurgical recovery, ore grades and capital and operating costs. As expected the Project is most sensitive to copper and gold price, followed by gold recovery in the mill (on the positive side) and copper grade to the mill (on the negative side) within a reasonable expected range for these key parameters.

1.13 Conclusions and Recommendations

From the work completed to date on the La Arena Project the project overall is deemed by Coffey Mining to be at pre-feasibility level, as defined by NI43-101, and is reasonably robust technically, socially and environmentally and makes a reasonable return on expected funds to be expended.

The November PFS included a list of items under recommended work and the relevant items have been included in this Report along with additional recommendations made by Coffey Mining.

A detailed analysis of what is required to be completed in the next stage of feasibility study has yet to be completed and it is recommended this be done as soon as time and funds permit. There are a number of project areas that are not yet to PFS level and these should be examined to see if any are on the project critical path before appointing any engineering group to begin detailed design and engineering work on the sulphide part of the Project.

2 INTRODUCTION

2.1 Scope of Work

Coffey Mining has been commissioned by Rio Alto Mining Limited (Rio Alto), a privately owned company incorporated under the laws of British Columbia, to prepare an independent Technical Report (Report) that would provide a summary of the La Arena gold-copper project (La Arena Project) in Peru.

This Report is to comply with disclosure and reporting requirements set forth in the Toronto Stock Exchange Manual, National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101), Companion Policy 43-101CP to NI 43-101, and Form 43-101F1 of NI 43-101.

The Report is also consistent with the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' of December 2004 (the Code) as 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).

Furthermore, this Report has been prepared in accordance with the 'Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Experts Reports (the "VALMIN Code") as adopted by the Australasian Institute of Mining and Metallurgy ("AusIMM"). The satisfaction of requirements under both the JORC and VALMIN Codes is binding on the authors as Members of the AusIMM.

All monetary amounts expressed in this report are in United States of America dollars (US$) unless otherwise stated.

2.2 Principal Sources of Information

In addition to a site visit undertaken to the La Arena Project in November 2007, the authors of this report have relied extensively on information provided by Iamgold, discussions with Rio Alto, and a number of studies completed by other internationally recognised independent consulting and engineering groups. A full listing of the principal sources of information is included in Section 21 of this report. The two primary Iamgold studies relied upon, including the supporting data and information to them, are:

- La Arena Project Pre-feasibility Study (November 2006)
- La Arena Project Scoping Study – Oxide Option (March 2007)

The authors have made all reasonable enquiries to establish the completeness and authenticity of the information provided and identified, and a final draft of this report was provided to Rio Alto along with a written request to identify any material errors or omissions prior to final submission.

2.3 Site Visit

Coffey Mining Chief Mining Engineer Linton Kirk and Principal Sub-consultant Resources (then Coffey Mining Manager Resource Geology Perth) Dr Jan de Visser completed a site visit to La Arena on 5 and 6 November 2007 during which they reviewed the data collection procedures and geology, mining, processing, environmental and waste disposal aspects of the project.

The authors also visited the nearby La Virgen dump leach gold mine that is owned and operated by San Simon.

2.4 Authors' Qualifications and Experience

Dr Jan Pieter de Visser is a professional geologist with 19 years experience in the exploration and evaluation of mineral properties internationally, including 13 years as an independent consultant. Dr de Visser is a Member of the Australasian Institute of Mining and Metallurgy ("AusIMM") and the Geostatistical Association of Australasia ("GoldersA"), and has the appropriate relevant qualifications, experience and independence as defined in the Australasian VALMIN and JORC codes and is a Qualified Person as defined in Canadian National Instrument 43-101. Dr de Visser visited the La Arena Project on one occasion in November 2007 and was, at that time, Principal Consultant Resources with Coffey Mining Pty Ltd. Dr de Visser is currently employed as Principal Advisor Project Development with the firm of WildHorse Energy Limited and is a Director of Resource Perspectives Pty Ltd.

Mr Linton John Kirk is a professional mining engineer with 30 years experience in the mining and evaluation of mineral properties internationally, including 11 years as an independent consultant. Mr Kirk is a Fellow of the Australasian Institute of Mining and Metallurgy ("AusIMM") and has the appropriate relevant qualifications, experience and independence as defined in the Australasian VALMIN and JORC codes and a Qualified Person as defined in Canadian National Instrument 43-101. Mr Kirk has visited the La Arena Project on one occasion in November 2007. Mr Kirk is currently employed as Chief Mining Engineer with the firm of Coffey Mining Pty Ltd.

Mr Christopher Witt is a professional metallurgist with 12 years experience in the mining industry, including 1 year as an independent consultant. Mr Witt is a Member of the Australasian Institute of Mining and Metallurgy ("AusIMM") and has the appropriate relevant qualifications, experience and independence as defined in the Australasian VALMIN and JORC codes and a Qualified Person as defined in Canadian National Instrument 43-101. Mr Witt has not visited the La Arena Project. Mr Witt is currently employed as Senior Consultant with the firm of Coffey Mining Pty Ltd.

2.5 Units of Measurements

All monetary figures expressed in this report are in United States dollars ("US$") unless otherwise stated. Quantities are generally stated in SI units, including metric tons (tonnes (t), kilograms (kg) or grams (g) for weight; kilometres (km), metres (m), centimetres (cm) and millimetres (mm) for distance; square kilometres (km^2) or hectares (ha) for area; and grams per tonne (g/t) for gold and silver grades (g/t Au, g/t Ag). Precious metal grades may also be expressed in parts per billion (ppb), and quantities may be reported in troy ounces.

Copper and molybdenum are also expressed in pounds (lbs) and some other measurements have also been included in both imperial and metric terms where this may assist the reader.

2.6 Independence

Neither Coffey Mining, nor the authors of this report, has any material interest in Rio Alto, MSM or related entities or interests. Our relationship with Rio Alto and MSM is solely one of professional association between client and independent consultant. This report is prepared in return for fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.

Specific sections of the report that the Qualified Persons are responsible for are provided in Table 2.6_1 and are repeated in the attached Qualified Persons certificates.

Table 2.6_1
Qualified Persons-Report Responsibilities

Who		Section
Jan de Visser	(Coffey Mining)	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17.1-17.1
Linton Kirk	(Coffey Mining)	4, 5, 17.2,18 except 18.6
Chris Witt	(Coffey Mining)	16, 18.6
Combined		1, 2, 3, 19, 20, 21

2.7 Abbreviations

A full listing of abbreviations used in this report is provided in Table 2.7_1 below.

Table 2.7_1

List of Abbreviations

	Description		Description
$	United States of America dollars	kWhr/t	kilowatt hours per tonne
"	inches	l/hr/m^2	litres per hour per square metre
μ	microns	lb	pound (weight)
3D	three dimensional	M	million
AAS	atomic absorption spectrometry	m	metres
ADR	adsorption, desorption and refining	Ma	million years
Ag	silver	MIK	Multiple Indicator Kriging
Al	aluminium	mm	millimetres
ARD	acid rock drainage	Mo	molybdenum
As	arsenic	Moz	million ounces
Au	gold	Mtpa	million tonnes per annum
AusIMM	Australasian Institute of Mining and Metallurgy	MW	megawatt
Ba	barium	N (Y)	northing
bcm	bank cubic metres	NaCN	sodium cyanide
Be	beryllium	NI	National Instrument (of Canadian stock exchange)
Ca	calcium	NPV	net present value
CaO	calcium oxide	NPV	net present value
CIM	Canadian Institute of Mining, Metallurgy and Petroleum	NQ_2	47.6mm inside diameter diamond drill rod/bit/core
cm	centimetre	NSR	net smelter return
Co	cobalt	°C	degrees centigrade
Cu	copper	OK	Ordinary Kriging
DDH	diamond drill hole	oz	troy ounce
DMT	dry metric ton	P_{80}	80% passing
DTM	digital terrain model	P90 -75μ	90% passing 75 microns
E (X)	easting	PAF	potentially acid forming
EIA	environmental impact assessment	PFS	Pre-feasibility study
EPCM	engineering, procurement and construction management	ppb	parts per billion
equ	equivalent	ppm	parts per million
Fe	iron	ppm	parts per million
FEL	front end loader	QAQC	quality assurance quality control
g	gram	QC	quality control
G&A	general and administration	RC	reverse circulation (drilling)
g/t	grams per tonne of gold	RC	refining charge
GDP	gross domestic product	RC	reverse circulation
ha	hectare	RL (Z)	reduced level
HDPE	high density poly ethylene	ROM	run of mine
Hg	mercury	RQD	rock quality designation
hp	horse power	RQD	rock quality designation
HQ_2	63.5mm inside diameter diamond drill rod/bit/core	SAG	semi autogenous grinding
hr	hours	SD	standard deviation
IRR	internal rate of return	SG	Specific gravity
IRR	internal rate of return	t	tonnes
ISO	International Standards Organisation	t/m^3	tonnes per cubic metre
JORC	Joint Ore Reserves Committee (of the AusIMM)	TC	treatment charge (smelting)
k	thousand	tpa	tonnes per annum
kg	kilogram	tpd	tonnes per day
kg/t	kilogram per tonne	TSF	tailings storage facility
km	kilometres	TSX	Toronto Stock Exchange
km^2	square kilometres	UTM	Universal Transverse Mercator (coordinate system)
kPa	kilopascal	VAT	Value Added Tax
kW	kilowatt	WMT	wet metric ton

3 RELIANCE ON OTHER EXPERTS

Neither Coffey Mining nor the authors of this report are qualified to provide extensive comment on legal issues, including status of tenure, and taxation associated with the La Arena property referred to in this report. Assessment of these aspects has relied heavily on information provided by Rio Alto's advisors which has not been independently verified by Coffey Mining, and this report has been prepared on the understanding that the properties are, or will be, lawfully accessible for evaluation, development, mining and processing.

Coffey Mining has relied on Rio Alto's lawyers Miranda & Amado Abogados, of Lima Peru for their opinion on the title for the La Arena mineral concessions and Coffey Mining has received a letter from Miranda & Amado Abogados supporting Rio Alto's claims.

No warranty or guarantee, be it express or implied, is made by Coffey Mining with respect to the completeness or accuracy of the legal and taxation aspects of this report. Coffey Mining does not accept any responsibility or liability in any way whatsoever to any person or entity in respect of these parts of this document, or any errors in or omissions from it, whether arising from negligence or any other basis in law whatsoever.

Coffey Mining has also relied on social and environmental opinions provided by Mr Max Schwarz contained in his report "Revised Preliminary Social & Environmental Due Diligence & Risk Report for the La Arena Project (Rio Alto Mining Limited) of 24 March 2008. Although Mr Schwarz is a qualified engineer, Principal of B&G Engineering SAC of Peru and has more than 15 years of experience in Peruvian mining, environmental and social matters, he is not a Qualified Person under the meaning of NI 43-101. Mr Schwarz was retained as an independent expert by Rio Alto and he accompanied Dr de Visser and Mr Kirk on the visit to La Arena project area on 5 and 6 November 2007. Extracts from Mr Schwarz's report are included in sections 1.10, 4.5, 18.7.3 and 18.13.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Background Information on Peru

4.1.1 Geography

Peru is the third largest country in South America after Brazil and Argentina at 1.29 million km^2. It shares borders with Ecuador and Colombia to the north, Brazil and Bolivia to the east, Chile to the south and the Pacific Ocean to the west. The Andes mountain range divides the country into three geographic regions:

- the highlands created by the Andes;
- the coast to the west; and
- the jungle to the east.

Peru has a population of approximately 28.7 million people, 9 million of which live in Lima, Peru's political and financial capital. The population is composed of several ethnic groups: 45% Amerindian, 37% mixed Amerindian and white, 15% white, and all others 3%. Spanish and Quechua are the official languages, though Aymara and a number of minor Amazonian languages are also spoken throughout the country. The country is covered by 78,000km of roads, 16,705km of which are highways.

Natural resources include copper, silver, gold, petroleum, timber, fish, iron ore, coal, phosphate, potash, hydropower, natural gas.

Natural Hazards include earthquakes, tsunamis, flooding, landslides, mild volcanic activity.

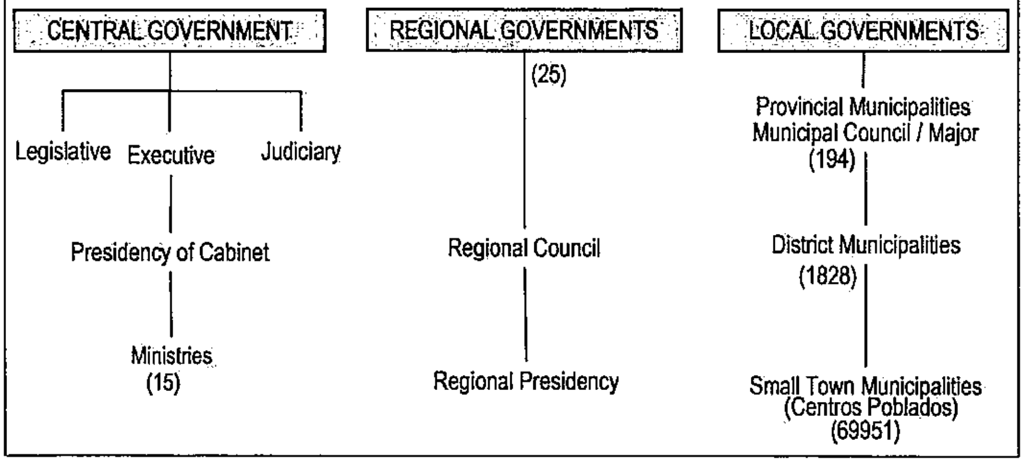
4.1.2 Political System

Peru is a constitutional republic where power is balanced between executive, legislative and judicial branches. The legal system is based on civil law system and the judicial branch comprises three tiers of lower courts which culminate in a Supreme Court, and the legislative branch takes the form of a unicameral congress.

The executive branch is led by a president, two vice presidents and a prime minister who oversees a council of ministers. Ministers are appointed for specific sectors. At the local level, Peru is divided into 25 political sub-divisions known as departments. The citizens of each department elect a regional president as well as local municipal authorities.

The project and its managing company will be accountable to all three levels of government to different extents.

Figure 4.1.2_1
Peruvian State - Structure



4.1.3 Economy

Inflation in Peru has varied greatly over the last few decades, but has now stabilized. From 1990, inflation has declined from a high of over 7,400% to an estimated 2.1% in 2006 increasing to 3.9% in 2007 due to an increase in the cost of imported agricultural products such as wheat and soybeans. The economy has experienced strong growth in recent years, with average real GDP growth of 4% between 2001 and 2005, improving to a 9% growth rate in 2007. This led to an average estimated per capita GDP of approximately $3,600 in 2007 and total estimated national GDP of $109.2 billion for 2007.

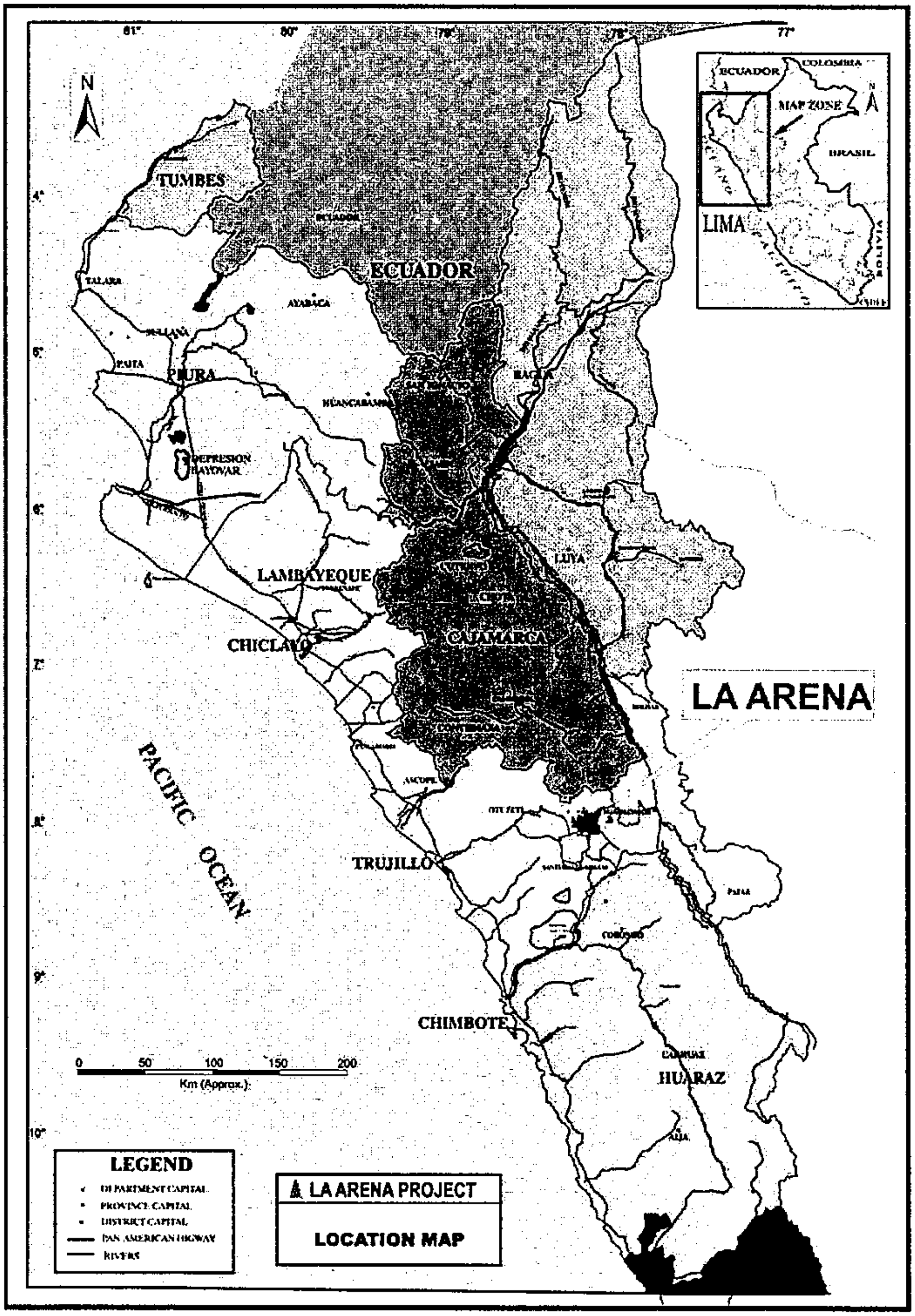
Peru is one of the fastest-growing economies in the Americas, fuelled by a construction boom, favourable terms of trade and export activity and a broad-based stimulative environment. Over US$12 billion in new investment is projected for the next five years, particularly in the energy, mining and infrastructure development sectors. Massive foreign investment targeting the Peruvian mining sector, together with sizable foreign exchange inflows linked to the country's export activity, has prolonged a bias towards appreciation of the local currency in inflation-adjusted terms.

The main industries in Peru are mining, steel and metal fabrication, oil and oil refining, natural gas, fishing, textiles and food processing. The main exports are agricultural products, copper, gold, zinc, petroleum and textiles.

4.2 Project Location

The La Arena Project is located in Northern Peru, 480km NNW of Lima, capital of Peru, refer to Figure 4.2_1. Access to La Arena is a 710km drive on paved highway or upgraded road from Lima. Politically, La Arena falls within the Huamachuco district, Sánchez Carrión province, department and Region of the La Libertad. The average altitude is 3,400 meters above sea level (m.a.s.l.) and the Project is located in the eastern slope of the Western Cordillera, close to the Continental Divide and rivers flow towards the Atlantic Ocean through a network of valleys.

Figure 4.2_1
Project Location Map



The geographic coordinates of the main gold mineralization are:

- Latitude 07° 50'S, Longitude 78° 08'W.

The U.T.M. coordinates are:

- 9 126 360 N, 816 237E.

4.3 Peruvian Mining Laws

The La Arena Project is subject to various Peruvian mining laws, regulation and procedures.

Mining activities in Peru are subject to the provisions of the Uniform Text of General Mining Law, which was approved by Supreme Decree No. 14-92-EM on June 4, 1992 and its several subsequent amendments and regulations, as well as other related laws. Under Peruvian law, the Peruvian State is the owner of all mineral resources in the ground, however it grants the right to explore for and exploit minerals by way of awarding mining concessions. A Peruvian mining concession is a property-related right; distinct and independent from the ownership of the surface land on which it is located. The term of a concession is indefinite, provided that related annual validity fees are duly and timely paid. The rights manifested in a mining concession are protected against third parties, transferable, chargeable and, in general, may be the subject of any transaction or contract not specifically forbidden by law. Mining concessions may be privately owned and no minimum state participation is required. Buildings and other permanent structures used in a mining operation are considered real property accessories to the concession on which they are situated.

4.3.1 Annual Validity Fees

Concession holders must pay an annual licence fee (the *derecho de vigencia*) by June 30 of each year. The annual fee is currently US$3 per hectare. Concession holders must reach a minimum level of annual commercial production of at least US$100 per hectare in gross sales within six years of the date the concession was granted or, if the concession has not been put into production within that period, the annual fee increases by US$6 per hectare (so called "penalties" or *penalidad*) for the seventh through eleventh years following the date of grant and, by an additional US$20 penalty fee per hectare thereafter. The concession holder shall be exempted from the *penalidad* in any year if an investment was been made within the concession in the previous year of ten times the amount of the *penalidad*. Failure to pay the *derecho de vigencia* (annual fee) and/or applicable *penalidad* (penalty) for two consecutive years will result in the forfeiture of the concession.

4.3.2 Royalties

In June 2004, Peru's Congress approved a bill to allow royalties to be charged on mining projects. The royalties are levied on a Peruvian mine's annual sales of minerals in refined, semi-refined or concentrate form according to the international market value of minerals at the following rates:

- 1.0% for sales up to US$60 million;
- 2.0% for sales between US$60 million and US$120 million; and
- 3.0% for sales greater than US$120 million.

The base to calculate the royalty is the international market value of the specific mineral, although certain deductions are allowed, such as indirect taxes, insurance, freight, storage, stow and loading expenses, as well as costs assumed according to the INCOTERMS agreed.

The royalty obligation is applied on the date an invoice is delivered or the product is delivered whichever is first. A penalty of 10% is imposed for non-payment, which is updated with interest up to the date the royalty is actually paid.

4.3.3 Ownership of Mining Rights

Pursuant to the Uniform Text of Mining Law:

- mining rights may be forfeited only due to a number of enumerated circumstances provided by law (i.e. non payments of the validity fees);
- equal rights to explore for and exploit minerals by way of concession may be granted to either Peruvian nationals or foreigners, except on concessions located within 50km of the Peruvian border which require for foreign owners an express authorization from the State; and
- the right to sell mining production freely in world markets is established. Peru has become party to agreements with the World Bank's Multilateral Investment Guarantee Agency and with the Overseas Private Investment Corporation.

4.3.4 Taxation and Foreign Exchange Controls

Corporate net income is taxed at a rate of 30% of annual net income, subject to an additional 4.1% withholding tax at the time profits are distributed to shareholders. Advance monthly payments are required on a percentage of gross income, subject to a final settlement in March of the following business year (January 1 through December 31).

There are currently no restrictions on the ability of a company operating in Peru to transfer dividends, interest, royalties or foreign currency to or from Peru or to convert Peruvian currency into foreign currency.

Congress has approved a Temporary Net Assets Tax, which applies to companies subject to the General Income Tax Regime. Net assets are taxed at a rate of 0.5% on the value exceeding Nuevo Sol 1,000,000 (approximately US$300,000). Taxpayers must file a tax return during the first 12 days of April and the amounts paid can be used as a credit against Income Tax. Companies which have not started productive operations or those that are in their first year of operation are exempt from the tax.

The Tax Administration Superintendence is the entity empowered under the Peruvian Tax Code to administer central government taxes. The Tax Administration Superintendence can enforce tax sanctions, which can result in fines, the confiscation of goods and vehicles, and the closing of a taxpayer's offices.

4.3.5 Stability Agreements

The Peruvian Mining Act provides to holders of mining rights the option of signing stability agreements with the Peruvian Government in connection with investments made to commence new mining operations or expand existing mining operations. Mining companies can obtain two complementary regimes (generally it is suitable that one company/operation have both regimes) of legal stability, the "General Legal Stability Agreement", which is signed with PROINVERSION, a government agency to encourage private investments; and the "Mining Guarantee Agreement", that is specific for mining companies.

In order to qualify, companies must submit satisfactory documentation to the Government regarding the amount of investment.

4.3.6 Environmental Laws

The Peruvian General Environmental Law, Law No 28611 approved on October 15, 2005, sets out that mining companies are responsible for the emissions, effluents, discharges and other negative impacts generated as a consequence of their activities on the environment, health or natural resources. Supreme Degree 016-93-EM Regulations for Environmental Protection of Mining Activities and Supreme Degree 38-98-EM, the Environmental Regulation for Exploration Mining Activities are the controlling regulations establishing the responsibility of government agencies to monitor compliance with the law.

The Peruvian Ministry of Energy and Mines establishes an environmental protection policy and proposes maximum allowable levels for effluents and signs environmental administrative stability agreements. The Ministry of Energy and Mines through its Director of Mining Environmental Issues is in charge of supervising environmental obligations corresponding to mining companies.

Pursuant to Supreme Decree 38-98-EM approved on November 30, 1998, concession holders are required to obtain an environmental permit from the Directorate for Environmental Affairs in order to carry out exploration and development activities. Mining companies are responsible for the control of emissions, discharges of effluent and disposal of all by-products resulting from their operations, and for the control of substances that may impose any hazard, either due to excessive concentrations or prolonged exposure.

In principle, an exploration permit is required for all exploration drilling programs. The law provides for three categories of exploration activities, depending on the extent of the impact caused to the surface. An exploration permit is not required for minor geological and geophysics assessments or studies such as surface rock sampling.

4.3.7 Mine Closure and Remediation

On October 14, 2003, the Peruvian government published Law 28090 "Mine Closure Law" which establishes provisions relating to mine closure plans. For existing mining operations the law established that a mine closure plan must be submitted for certification to the Peruvian Ministry of Energy and Mines within a one-year period, after the implementing regulation comes into effect. In the case of the new mining operations, the mine closure plan must be submitted for certification within a one-year period, after approval of the mine's Environmental Impact Assessment (EIA).

The law provides as well, that a mine must grant an environmental warranty for the estimated costs associated with its mine closure plan. In this order, the regulation established that the warranties must be paid in the first twelve (12) days of every year. These payments would start a year after the mining closure plan is approved. The law also indicates that the warranty may take the form of insurance, cash collateral, a trust agreement or other forms as permitted by the Peruvian law.

The Mine Closure Law became effective on August 16, 2005 with the enactment of its Regulation by Decree No. 033-2005-EM.

4.3.8 Workers Participation

Under Peruvian law, every company that generates income and has more than twenty workers on its payroll is obligated to grant a share of its profits to its workers. For mining companies, the percentage of this profit-sharing benefit is 8% of pre-tax income. Cooperative, self-managed companies, civil partnerships and companies that do not have more than twenty workers are exempt from this profit-sharing obligation. Both permanent and contract workers must be taken into account for purposes of these laws; the only legal requirement is that such workers must be registered on a company's payroll.

The profit-sharing amount made available to each worker is limited to 18 times the worker's monthly salary, based upon their salary at the close of the previous tax year.

In case there is a remnant between the mentioned 8% of pre-tax company's income and the limit of the workers profits participation, this remnant shall be used for the creation of a fund with the purpose of worker training and job promotion, as well as public investment projects.

4.3.9 Regulatory and Supervisory Bodies

The three primary entities in Peru that regulate and supervise mining companies are the Ministry of Energy and Mines, the National Institute of Concessions and Mining Cadastre and the Supervisory Entity for the Investment in Energy and Mining ("OSINERGMIN"). The Ministry of Energy and Mines promotes the integral and sustainable development of mining activities, as well as regulates all the activities in the Energy and Mines sector. OSINERGMIN oversees regulatory compliance for safety, environmental protection, job-related health, contractors, and mining development matters. In addition to officers of OSINERGMIN private companies specifically registered for this purposes are entitled to supervise such compliance.

The National Institute of Concessions and Mining Cadastre (INGEMMET) is the Government Entity entitled to grant mining concessions, which entitles the concession holder the right to explore and exploit the zone where such concessions are located. Concession holders are required to explain how operations will comply with Peruvian environmental regulations by filing an Environmental Impact Assessment.

Other Peruvian governmental and regulatory bodies involved with mining companies include the:

- National Institute of Natural Resources, which manages protected natural areas and issues an advisory opinion on every concession holder's Environmental Impact Assessment, to the extent that planned operations will alter natural landscape;
- General Bureau of Environmental Health of the Ministry of Health, which manages waste discharge into the environment and related issues, particularly those that may affect public health;
- Ministry of Internal Affairs, which approves the acquisition, transport and usage of explosives for mining companies;
- National Institute of Culture, which certifies the non-existence of archaeological remains, as typically required for the Environmental Impact Assessment;
- General Bureau of Harbour Masters' Offices and Coastguards, which enforces sanctions if rivers or navigable lakes located within Peru's national borders are contaminated for whatever reason;
- Supervisory Board for Investment in Energy, which monitors compliance with conservation laws in regarding utility issues; and
- Ministry of Agriculture, which approves water usage permits.

In conjunction with the Peruvian central government, regional governments manage natural resources and improving the quality of the environment on a sustained basis. In addition, municipalities grant licenses for municipal, business, and residential construction.

4.4 Tenement Status

The mineral concessions pertaining to the La Arena Project total 20,673 hectares. They were fully owned and registered to Sociedad Minera Cambior Peru S.A. (SMCP), a wholly-owned subsidiary of Cambior. Mineral concessions in Peru are single concessions that, once granted over an area defined by U.T.M. coordinates, give the right to the titleholder to carry out exploration, development and production within the concessions.

Cambior was acquired by Iamgold in November 2006 and Iamgold decided to sell La Arena. To facilitate the sale all but the 44 mining concessions totalling 20,673 hectares of La Arena were transferred by Iamgold to a new Peruvian company. The 44 mining concessions covering the La Arena Project are held by La Arena SA, the re-named SMCP.

Figure 4.4_1
Regional Mining Properties

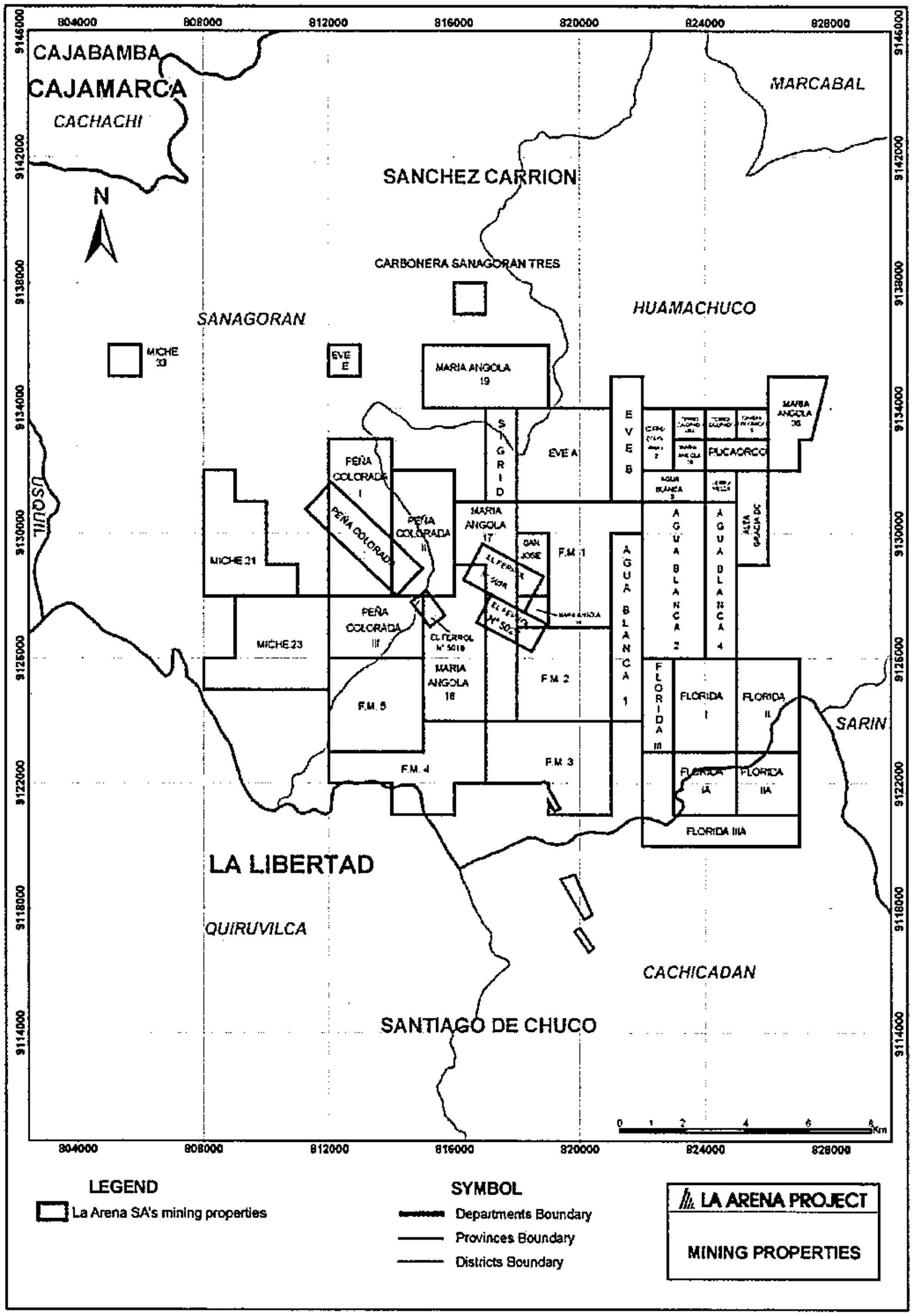


Figure 4.4_2
Mining Concessions

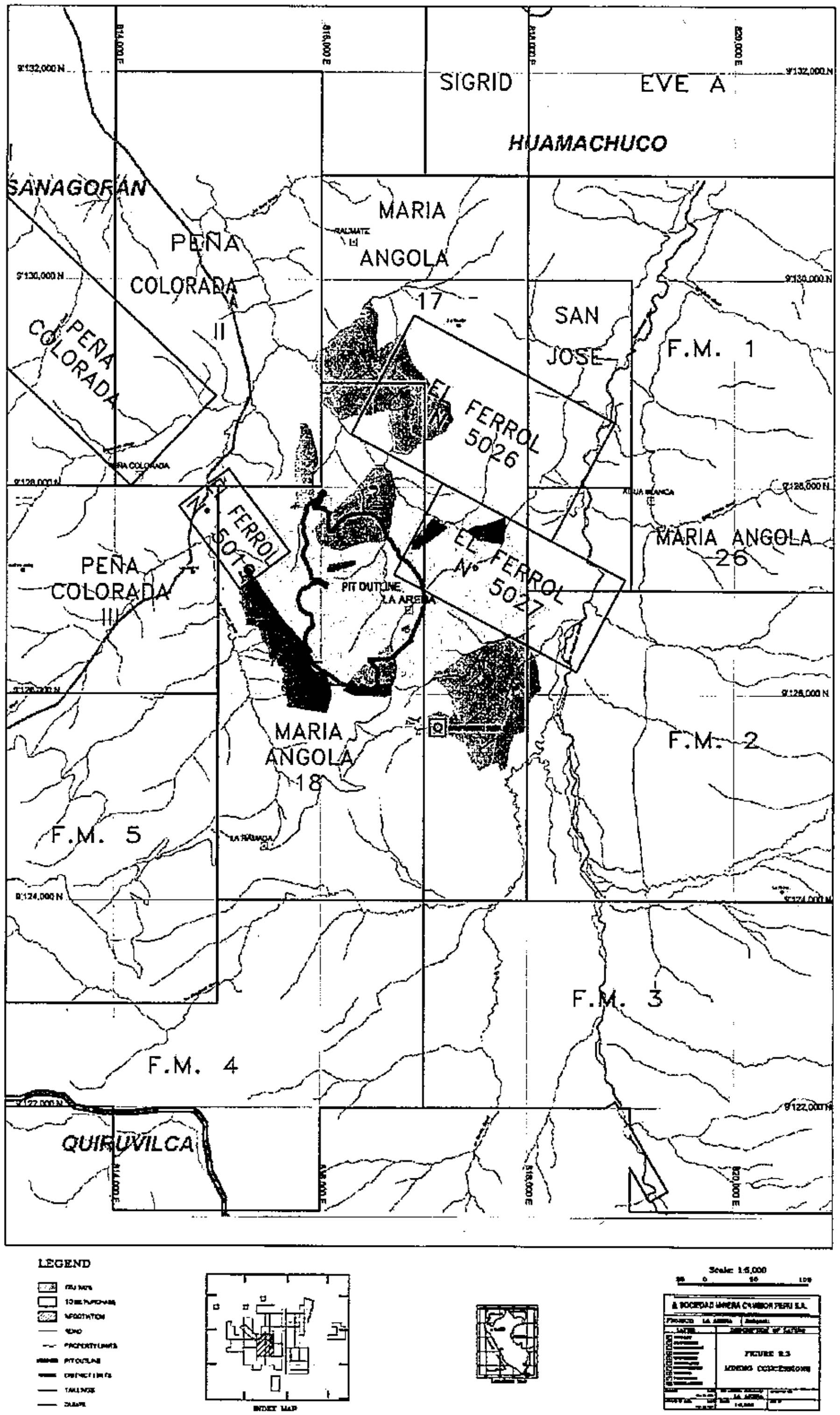


Table 4.4_1
Mining Concession Fully Owned by SMCP

N°	Mining Right Code	Name	Area (ha)	Title	
				Res. N°	Date
1	01-00639-94	FLORIDA I	600	00374-95	Feb.28, 1995
2	01-00640-94	FLORIDA II	600	08280-94	Nov. 30, 1994
3	01-01087-94	FLORIDA III	300	04901-94	Aug. 29, 1994
4	01-01299-96	F.M. 1	1,000	04525-97	Jun. 18, 1997
5	01-02369-96	EVE A	900	07639-96	Nov. 19, 1996
6	01-02370-96	EVE B	400	02320-97	Mar. 26, 1997
7	01-03640-96	MARIA ANGOLA 19	800	03153-97	Apr. 28, 1997
8	01-02892-97	MARIA ANGOLA 29	100	01266-98	Mar. 31, 1998
9	01-00261-01	AGUA BLANCA 1	600	00160-02	Jan. 31, 2002
10	01-00262-01	AGUA BLANCA 2	1,000	00633-01	Jul. 26, 2001
11	01-01072-01	AGUA BLANCA 3	200	00106-02	Jan. 28, 2002
12	01-01073-01	AGUA BLANCA 4	500	00144-02	Jan. 31, 2002
13	01-01908-00	CERRO VIELZA 1	100	04789-00	Nov. 27, 2000
14	01-00997-01	CERRO COLORADO	100	00227-02	Feb. 13, 2002
15	01-01026-01	PUCAORCO	200	00094-02	Jan. 28, 2002
16	01-00112-02	CERRO COLORADO 2	200	00823-02	May 10, 2002
17	01-00288-02	CERRO COLORADO 6	100	01274-02	Jul. 23, 2002
18	03-00122-02	ALTA GRACIA DC	300	02475-02	Dec. 13, 2002
19	01-02107-02	COLORADO CBJ	100	01544-03	Jun. 23, 2003
20	15009027X01	EL FERROL N° 5019	60	00305-88	Aug. 04, 2003
21	15010088X01	EL FERROL N° 5026	286	00134-91	Mar. 18, 1991
22	15010314X01	EL FERROL N° 5027	200	00500-91	Aug. 19, 1991
23	15007637X01	PEÑA COLORADA	480.30	06449-94	Oct. 19, 2004
24	03-00037-94	PEÑA COLORADA I	670.28	03450-95	Jun. 30, 1995
25	03-00038-94	PEÑA COLORADA II	703.10	01906-96	Apr. 17, 1996
26	03-00039-94	PEÑA COLORADA III	585.70	02197-96	Apr. 30, 1996
27	01-00639-94A	FLORIDA I A	400	02067-02	Nov. 08, 2002
28	01-00640-94A	FLORIDA II A	400	02281-02	Nov. 26, 2002
29	01-01087-94A	FLORIDA III A	700	02065-02	Nov. 08, 2002
30	01-00001-95	MARIA ANGOLA 18	805.00	01798-97	Feb. 28, 1997
31	01-00034-95	MARIA ANGOLA 17	625.47	05215-96	Aug. 29, 1996
32	01-01417-95	SIGRID	300	00540-97	Jan. 28, 1997
33	03-00001-95	SAN JOSE	139.03	07923-96	Nov. 20, 1996
34	01-01300-96	F.M. 2	852.81	04089-96	Jul. 26, 1996
35	01-01301-96	F.M. 3	988.45	07227-96	Oct. 30, 1996
36	01-01302-96	F.M. 4	900	03701-96	Jul. 15, 1996
37	01-01303-96	F.M. 5	900	04972-97	Aug. 26, 1997
38	01-02373-96	EVE E	100	07874-96	Dec. 27, 1996
39	01-00576-97	MICHE 21	800	04083-97	May 28, 1997
40	01-00578-97	MICHE 23	1,000	03259-97	Jun. 24, 1997
41	01-01114-97	MICHE 33	100	05067-97	Jun. 30, 1997
42	01-02891-97	MARIA ANGOLA 26	49.16	01561-98	Apr. 30, 1998
43	03-00046-03	CARBONERA SANAGORAN TRES	100	03543-03	Nov. 05, 2003
44	01-01655-04	MARIA ANGOLA 36	428.09	01930-05	Feb. 09, 2000
Total			**20,673.39**		

The mining concessions are in good standing. No litigation or legal issues related to the project are pending. Concessions are generally irrevocable but may lapse or terminate in the following two circumstances:

- Failure by a concession holder to pay the mining validity fee (*derecho de vigencia*) for two consecutive years; or
- Failure by a concession holder to pay the penalty (*penalidad*) for two consecutive years, for not achieving exemption from the penalty by meeting investment requirements or for not meeting minimum annual production targets.

The mineral resource identified so far in the La Arena deposit is completely contained within the mining concession "Maria Angola 18". This claim is 100% SMCP and is free of underlying agreement such as royalty payable to previous private owners.

Rio Alto Mining Limited has the right to acquire La Arena S.A. pursuant to the terms of a letter agreement with Iamgold Quebec Management Inc. Rio Alto is to be acquired by MSM and Rio Alto and MSM have entered into a letter agreement which sets forth the basic terms and conditions for the acquisition of Rio Alto by MSM.

4.5 Environmental Liabilities

Field work during the baseline study for the Pre-Feasibility Study identified environmental damages generated mainly by the mining industry that occurred several years ago.

In the vicinity there is an old mine named Tambo Chiquito Mine (former Florida Mine), which drains from a coal mine on the left bank of Yamobamba river. This is an old underground mine located 10km South East from La Arena which was abandoned approximately 50 years ago. There remains remnants of the plant, the abandoned camps and offices as well as three small waste dumps with a total of 6000m^3 of tailings which are not confined.

There is generation of residual acidity and mine water (pH 3.5) to the Tambo Chiquito Creek which is a tributary of the Yamobamba River, however the creek is now stabilized and does not represents a significant risk to the Yamobamba River at present.

B&G Engineering advise that the environmental liabilities that may have been generated by the exploration at La Arena are not significant and this work has been managed in an environmentally efficient way and in close coordination with the community and/or individual owners who might have been involved with them.

4.6 Permitting

4.6.1 Permitting Process

Permitting is divided in five categories related to the different stages of a mining operation:

- Exploration.
- Feasibility.
- Development / Construction.
- Production.
- Mine Closure.

4.6.2 Permitting for Exploration

For exploration companies specific environmental policies have been implemented such as DS No. 038-98-EM- Environmental regulation for mining exploration activities. This decree classifies exploration companies, and their obligations, into three categories:

Category and Obligation:

A: Activities with minimum or no impact on the ground (i.e. geology, geophysics and topographical surveys)

No obligations

B: Activities for an exploration area of 20 or less hectares requiring 20 or less perforation platforms.

Filing with the Ministry of Energy and Mines of a report containing general information about areas to be disturbed; planned exploration activities; description of environmental control system; and procedures and plan of remediation of the impact caused.

C: Activities in an exploration area of more than 20 hectares, requiring more than 20 perforation platforms.

Obtain approval form the Ministry of Energy and Mines for an environmental evaluation containing a detailed description of activities; their possible impact in the environment; environmental control system; and procedures and plan of remediation of the impact caused.

The Project has the required permitting in place until mid 2009.

4.6.3 Permitting for Feasibility and Development

A number of permits are required to be issued by Peruvian government authorities prior to mining operations commencing.

An approved Environmental Impact Assessment (**EIA**) encompassing a description of the operation, environmental baseline study and management plan, mitigation and closure plans is required prior to any mining exploitation and involves public workshops mediated by registered environmental consultants. Approval terms are 120 calendar days and lack of response is deemed approval. It is generally understood that the approval process usually lasts much longer (180 to 270 calendar days) depending on the number and nature of observations raised by authorities. It is valid for the lifetime of the mine but may be modified upon changes to mine plan.

Authorization to Begin Exploitation describes the methods and techniques to be used during the operation which must be approved by the Ministry of Energy and Mines. Approval terms are 30 days and require prior approval of the E.I.A. and proper land use rights.

A **Beneficiation Concession** will grant the company the right to extract and refine metals. The concession will be granted upon presentation of the final design and construction maps of the processing plant, tailings pond and ancillary facilities, an approved E.I.A and water right permit.

The **Water Permit** grants its titleholder the right to use a determined maximum volume of water from a specific source for well-defined uses. The Huamachuco Technical Administration for Irrigational District (ATDR) has a single procedure for granting all the water-use permits. The Ministry of Health is responsible for issuing the drinking and wastewater treatment and discharge permits.

Prior to the start of mining, the company must have an approved **Closure Plan** that includes the closure measures and associated cost estimates (estimated at US$7.5M). A financial bond must be posted within 12 days of the following year in which the Closure Plan has been approved and a final Closure Plan must be submitted two years before the planned shutdown.

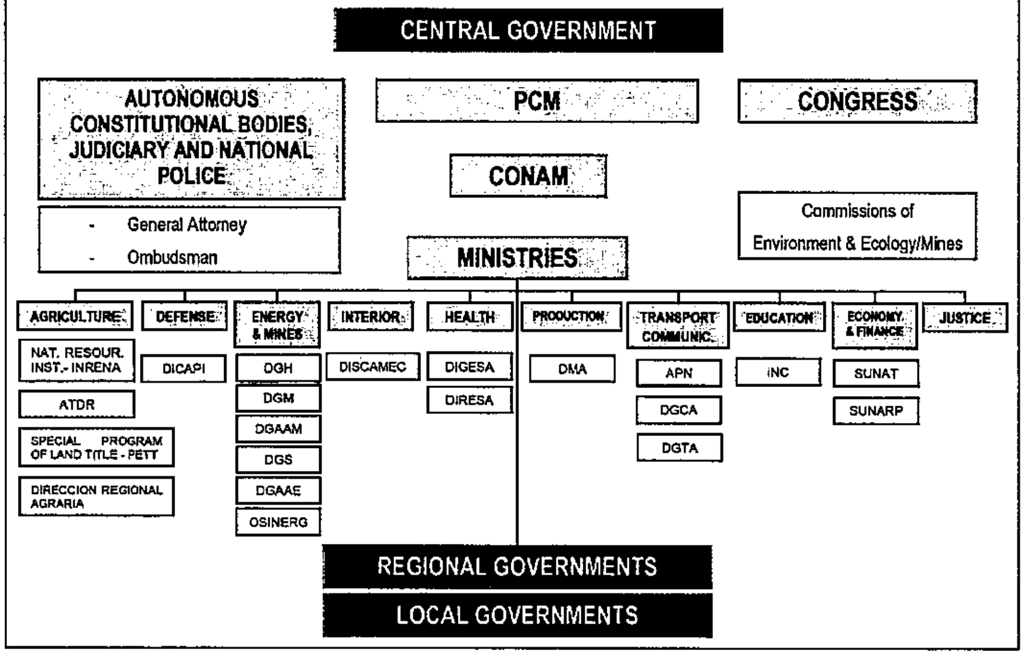
All projects which may affect the Peruvian cultural heritage must previously obtain a **Certificate of Non-existence of Archaeological Remains** from the National Institute of Culture for their operation to proceed. Reconnaissance work has already been carried out at La Arena and the conclusion is that the project will not impinge on any site of archaeological importance.

Other licenses such as Transportation and Storage of Explosives, Authorization for Thermo-electric Generation Plants and Use of Liquid Fuels (among others) must of course be obtained before any mining occurs. Approximately, a dozen ministries and agencies (from the federal down to the municipal levels) are involved in the permitting process as shown schematically in Figure 4.7.2_1.

The amount of annual tax payable to the government for maintaining mining concessions is equal to US$3.00/ha in tax plus a penalty payable on any claim where production is not reached within 6 years of the staking date.

In 2006 Sociedad Minera Cambior Peru, a wholly-owned subsidiary of Cambior, (SMCP) paid US$65,912 in tax plus US$100,472 in penalty (almost all concessions are subject to the penalty payment provisions of the law) to maintain the 21,971 hectares related to La Arena property, i.e. a total of US$166,384. It is estimated that SMCP will have to pay up to US$199,000/year in tax and penalties to maintain the actual property until the project is officially put in production. For 2007 there are unpaid penalties relating to 20 of the 44 concessions amounting to $115,971 and unpaid licence fees of $5,718, which must be paid by June 30, 2008 to maintain the concessions in good standing.

Figure 4.7.2_1
Government Permitting Authorities



5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Project Access

The project can be accessed via a 160km national roadway from the coastal city of Trujillo directly east towards Huamachuco, passing through Chiran, Shorey/Quiruvilca and the Alta Chicama project (Barrick Gold Corporation). The road is paved for 38km and the remainder is a good compacted material road. The road from Alta Chicama to the project site is being upgraded and paved. This work is planned to be complete by late 2008. An air strip is also present at Huamachuco, a town of approximately 20,000 people located 18km from La Arena, that accommodates small airplanes.

5.2 Physiography and Climate

The topography in the project area is relatively smooth with undulating hills. Elevations vary between 3,000 and 3,600 meters above sea level. In general, the slopes are stable with grades varying between 16° and 27°, and the land is covered with typical vegetation from the area.

On the northern and southern flanks of the deposit localised unstable areas exist where landslides have occurred during previous rainy seasons.

The average annual temperature from compiled data is 12°C. The maximum recorded temperature varies between 16 to 18°C and the minimum lies between 8 and 10°C.

Total annual rainfall varies between 750 and 850mm/a and the average total annual evaporation rate ranges between 950 and 1 000mm/a. The average relative humidity varies monthly between 73 and 90%.

Maximum precipitation usually occurs during the months of January through March while the months of June to August are the driest. The maximum daily precipitation recorded to date at the La Arena site is 34.6mm and occurred in March of 1999 while minimum precipitation was recorded in July 1998 with a total of 1.2mm.

5.3 Population Centres

The following information is from the November 2006 PFS:

In the area of study of the sub-basin of the Yamobamba River there are 2,559 inhabitants residing in five communities. The distribution of the inhabitants within the community is uneven. The community with the smallest number of inhabitants is Agua Blanca (11%) while the most populated one is La Colpa (25%). There are 1,136 inhabitants within the local area of study, 75% are from La Arena and the remainder from La Ramada.

A little more than half of the population (52.6%) is aged 20 years or younger and less than a fifth of the population (18.2%) is aged of 40 years or older. 29.2% of the population is between 19 and 40 years old. These results show a predominantly young population which follows the demographic pattern of the country's rural population.

The majority of the heads of household are men (87.5%). Nuclear families prevail, i.e. parents and children, with 62.5%. The average number of members in a household is 5.27 persons.

The young population moves temporarily or permanently in search for a job and educational services to the cities of Trujillo and the Sanchez Carrion province, mainly to Huamachuco (within the region), and to Lima (outside the region).

Immigration to the local area is of lower than that of emigration. The majority of those who now live in the local area come from surrounding rural communities.

5.4 Local Infrastructure and Services

The La Arena project is a greenfields project. The current infrastructure at site includes an exploration camp and access tracks.

All future mining, processing and support activities will take place at the Project site with the exception of a small office which will be located in Salaverry on the coast to supervise concentrate shipments and offer a procurement service for the operation.

5.4.1 Power

The nearest power supply is the Trujillo Norte – Alto Chicama 138kV transmission line 18km from La Arena. This power line is privately owned by CTA (Compañía Transmisora Andina), a subsidiary of Barrick, and holds full ownership rights, therefore an agreement will need to be negotiated with CTA to allow a connection to their existing facilities.

5.4.2 Water

There are no formal water supply schemes in the Project area. Water for the project will be extracted from groundwater, adjacent water courses and through recycling and reuse of water wherever reasonably practicable.

5.4.3 Project Site Layout

The locations and areas for waste dump and tailings storage, dump leach pads, processing plant and other infrastructure are discussed in Section 18 and all of this infrastructure lies well within the boundaries of La Arena SA's mining proprties.

5.5 Land Purchase Status

As the Project currently stands it is estimated that approximately 1,000ha of surface lands will be required in total for both the gold oxide and copper-gold sulphide projects, out of which 500ha have already been acquired by Iamgold, leaving a balance of approximately 500ha to acquire from approximately 100 families.

About 90% of the area to acquire is composed of individual titles registered in the Public Registry (SUNARP), allowing direct negotiation with the owner.

The amounts paid on the purchase of the surface land have averaged 9.3 thousand soles (approximately $3,300) and ranged between 1 and 45 thousand soles per hectare ($330 to $16,000/ha). The purchase program of surface land is continuing at the present time and the prices that have been agreed recently range from 3 thousand soles ($1,070) to 10 thousand soles ($3,600) and averaged 6 thousand soles ($2,100), which fall within the historical averages and continue to represent the current value for surface land in the area.

6 HISTORY

6.1 Ownership History

The deposit was first discovered by Cambior geologists in December 1994. Cambior staked a claim for mining concessions of 1,800Ha over the deposit in January 1995. A further 70,000Ha of mining concessions were claimed in 1996, most of which have been allowed to lapse or have been sold. The mining concessions making up the La Arena Project passed to Iamgold following its acquisition of Cambior.

6.2 Exploration History

The geological exploration work completed at La Arena includes:

- First half 1996 – detailed surface geochemistry and 1,502m of diamond drilling in 6 holes;
- Second half 1996 – 2,240m of diamond drilling in 10 holes;
- 1997 – 4,958m of diamond drilling in 32 holes;
- 1998 – 10,900m of diamond drilling in 58 holes;
- Between 1999 and 2003 - following a pre-feasibility study, unfavourable economical conditions did not allow the project to progress;
- Between 2003 and 2006 - five drilling campaigns were completed for 33,705m of diamond drilling in 213 holes and 1,186m of RC drilling in 11 holes;
- 2007 – 5,500m of diamond drilling in 21 holes.

The accumulated drilling over the La Arena deposit area to end of December 2007 reached 59,991m in 351 holes and 4,120m dug in 60 trenches completed in 2004.

The results of the drilling campaigns have been incorporated in a number of resource estimates as detailed below.

6.3 Resource History

Legacy resources set out in Table 6.3_1 and quoted elsewhere in this Report are not National Instrument 43-101 compliant. The reader is advised that these estimates should not be relied upon for any decision making purposes. No NI43-101 report has been previously produced for La Arena, the reason provided by Iamgold was that the project was never a material asset for either Cambior or Iamgold.

The estimation of resource at La Arena has been completed as tabulated below in Table 6.3_1. Previous work reported the resources so-called mineable, in-pit resources and these results have been tabulated as such.

Table 6.3_1
La Arena Project
Resource History

Date	Gold Price US$/oz	La Arena Mineable, In-Pit Resources	Cutoff (Au g/t)	Source
Oct. 1997	350	All categories: 16.1Mt @ 1.12g Au/t (*580,000 oz*)	0.3	Oct. 97 conceptual pre-feasibility study
Nov. 1999	350	All categories: 17.7Mt @ 0.92g Au/t (*519,600 oz*)	0.3	Dec. 99 Pre-feasibility study
June 2000	285	All categories: 10.8Mt @ 1.15g Au/t (*303,700 oz*)	0.3 (?)	Scoping Study (4,000 tpd heap leach)
Aug 2006	550	Measured & Indicated Gold oxide: 37.4Mt @ 0.59g/t (*713,000 oz*) Porphyry: 102.3Mt @ 0.39g/t (*1.3M oz*), 0.48% Cu (1,070.*9M lbs*)	0.19g/t Au 0.3% Cu equ.	10 Aug. 2006 Cambior press release
Nov. 2006	550	Measured & Indicated Heap leach ore: 35.1Mt @ 0.44g/t (*688,100 oz*) Mill ore: 93 Mt @ 0.38g/t (*1.1M oz*), 0.47% Cu (*968.9M lbs*)	0.19g/t Au 0.3% Cu equ.	Pre-Feasibility Study
Feb. 2007	550	Measured & Indicated Heap leach ore: 26.8Mt @ 0.65g/t (*557,400 oz*)	0.20g/t Au	Oxide Option Scoping Study

A resource estimate was completed by Iamgold in July 2003 which included the resources at a deposit (El Toro) which is outside the La Arena project area. The results of this estimation have not been included.

The most recent resource estimates for the La Arena deposit were completed by Iamgold in December 2006 and August 2007. The December 2006 Resources (Table 6.3_2) were confined within a pit shell based on US$550/oz Au and US$1.50/lb Cu. The majority (74%) of the resource tonnes are in copper-rich mineralisation largely in primary and secondary porphyry (Cu≥ 300ppm) with the remainder (26%) in copper -poor mineralisation largely in oxide sandstone (Cu < 300ppm).

Table 6.3_2
La Arena Au-Cu Project
In-Pit Resource by Iamgold (December 31st 2006)

	Tonnes (Mt)	Au Grade (g/t)	Cu Grade (%)	Ag Grade (g/t)	Mo Grade (ppm)	Au ('000 oz)	Cu ('000 lbs)
"measured"	25.9	0.53	0.16	0.32	25.1	443	91,967
"indicated"	113.7	0.43	0.39	0.19	42.1	1,554	986,826
"measured" + "indicated"	**139.6**	**0.45**	**0.35**	**0.21**	**38.9**	**1,997**	**1,078,793**
"inferred"	9.9	0.28	0.33	0.15	49.3	89	71,067

In 2007 Iamgold completed a 5,000m drilling program targeting oxide mineralisation along the west side of the planned pit. An updated resource evaluation in August 2007 (Table 6.3_3) included the results of this drilling and included the molybdenum and silver content. Resources were confined within a pit shell based on US$550/oz Au, US$1.50/lb Cu, US$10/lb Mo and US$10/oz Ag.

Table 6.3_3
La Arena Au-Cu Project
Updated In-Pit Mineral Resource by Iamgold (August 31st 2007)

	Tonnes (Mt)	Au Grade (g/t)	Cu Grade (%)	Ag Grade (g/t)	Mo Grade (ppm)	Au ('000 oz)	Cu ('000 lbs)	Ag ('000 oz)	Mo ('000 lbs)
"measured"	25.5	0.51	0.17	0.31	26.3	414	97,962	250	1,477
"indicated"	123.0	0.41	0.40	0.20	42.3	1,636	1,078,760	781	11,472
"measured" + "indicated"	**148.5**	**0.43**	**0.36**	**0.22**	**39.6**	**2,050**	**1,176,722**	**1,031**	**12,949**
"inferred"	10.7	0.26	0.34	0.17	53.4	91	80,835	58	1,265

Coffey Mining does not support the Measured classification of the 2007 (and 2006) resource. Following detailed review and validation, Coffey Mining adopted the latest grade estimate by Iamgold but reclassified the Measured category to Indicated. In Section 17.1 of this report the La Arena Mineral Resource is reported according to current 43-101 standards for reporting of mineral estimates.

There has been no production from the La Arena property.

7 GEOLOGICAL SETTING

7.1 Regional Geology

The La Arena deposit is located in the Huamachuco region, in the eastern flank of the Cordillera Occidental of northern Peru. The region displays a particularly rich endowment of metals (Cu-Au-Ag) occurring in porphyry and epithermal settings, including the Lagunas Norte mine at Alto Chicama, the Comarsa mine, La Virgen mine, Shahuindo exploration project and Tres Cruces development project.

The regional geology comprises:

- Tertiary Calipuy Group Cordilleran arc volcanics covering the western sector, intruded by upper Miocene subvolcanic bodies of andesitic and dacitic composition.
- Folded and faulted Mesozoic sedimentary sequences in the eastern sector, comprising of Cretaceous shallow marine sediments varying from upper carbonate-rich to lower Chimu Formation quartz sandstones with local coal beds, and Upper Jurassic Chicama deep marine shales, siltstones and sandstones.
- Precambrian and Paleozoic basement to the east and coastal batholith to the west.
- Tertiary intrusive rocks.

The structural grain of the region trends NW-SE, consistent with the trend in this portion of the Andes. Two other structural trends are developed in NE-SW and N-S directions. Several deposits and geochemical anomalies are associated with the intersection of these structures.

The major Huamachuco dome intrusive affects the Mesozoic sedimentary sequence, whereby the dome margins are the most intensively altered and display surface gold anomalies and mineralisation.

Regional geology, lineaments, intrusives, mines and prospects are shown in Figure 7.1_1.

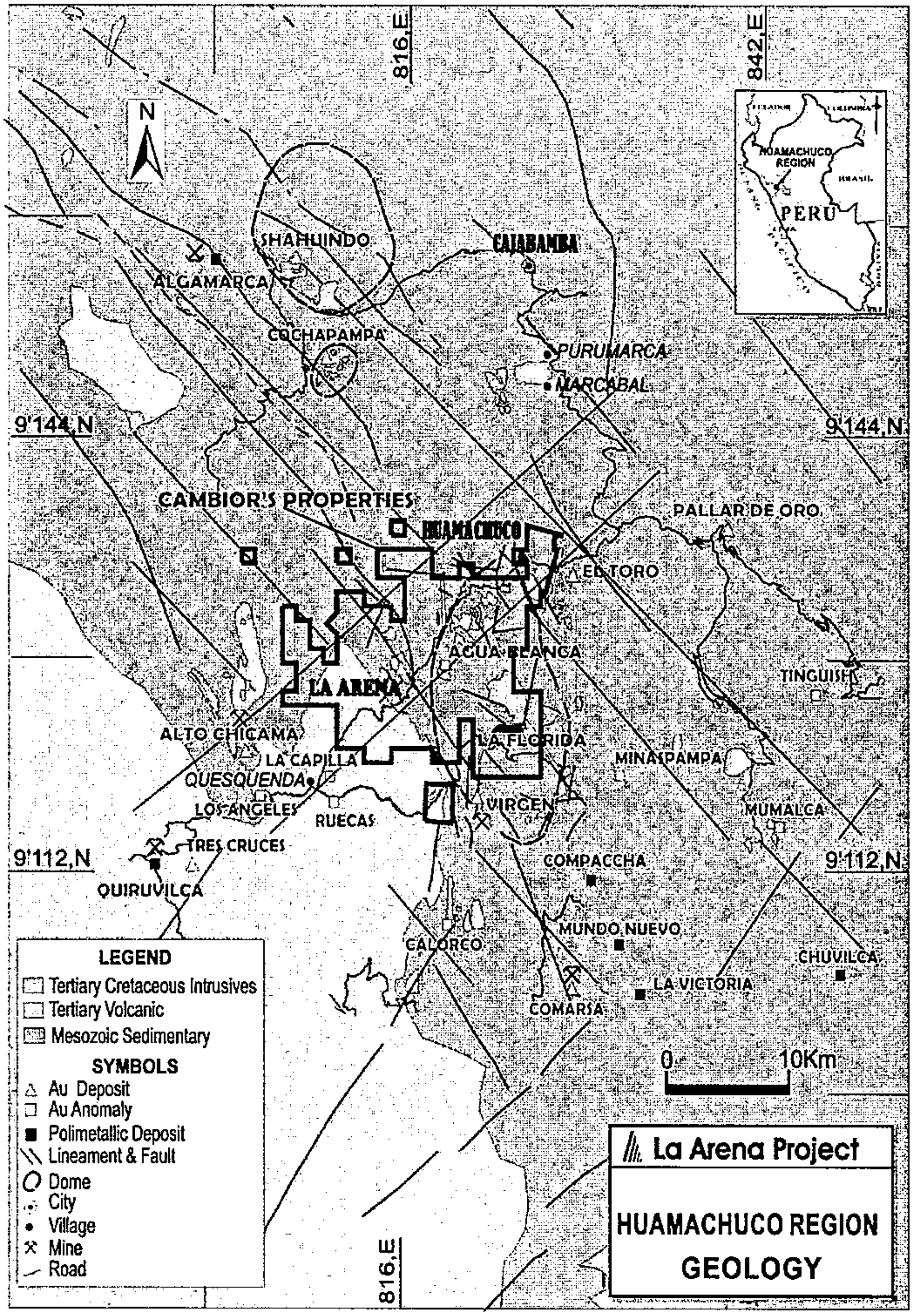
7.2 Project Geology

The Mesozoic sedimentary sequences on the La Arena property consist of dark grey slates and carbonaceous shales of the Upper Jurassic Chicama Formation, whitish quartzites, sandstones and siltstones of the Lower Cretaceous Chimu Formation, thin limestone horizons of the Santa Formation, pinkish shales and brown sandstones of the Carhuaz Formation, white quartzites of the Farrat Formation, and grey blue limestone units of the Inca, Chulec and Pariatambo Formations.

The Tertiary volcanic sequences consist essentially of andesitic and dacitic tuff and agglomerate horizons in the base interbedded with andesitic lavas of the Calipuy Group.

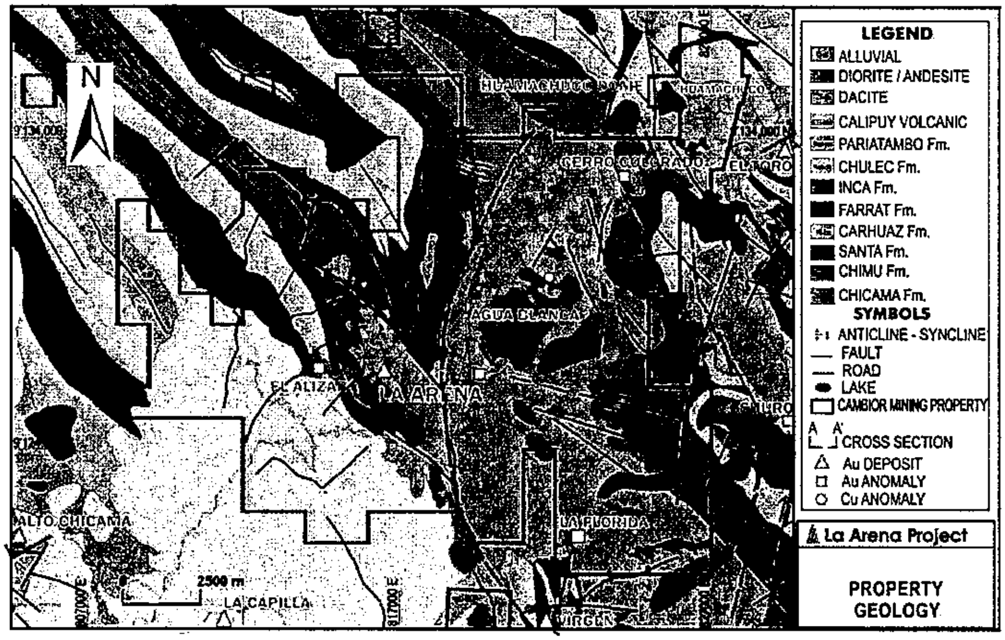
Tertiary intrusive rocks are emplaced along the fold axes, showing laccolitic stock forms such as La Arena. Other intrusives display more typical hypabyssal shapes, such as the Alizar and Agua Blanca stocks.

Figure 7.1_1
Regional Geology, Lineaments, Intrusives, Mines and Prospects



Over 30% of the property is covered with quaternary moraine-alluvial deposits (Figure 7.2_1).

Figure 7.2 _1
Property Geology



8 DEPOSIT TYPES

8.1 Introduction

The region displays a particularly rich endowment of metals (Cu-Au-Ag) occurring in porphyry and epithermal settings, including the Lagunas Norte mine at Alto Chicama, the Comarsa mine, La Virgen mine, Shahuindo exploration project and Tres Cruces development project.

8.2 Porphyry Copper Deposits

The North Porphyry, South Porphyry and Dacite Breccia deposits of La Arena are associated with the porphyry copper deposit type. Porphyry copper deposits are copper orebodies which are associated with porphyritic intrusive rocks. The ore occurs as disseminations along hairline fractures as well as within larger veins, which often form a stockwork. The orebodies typically contain between 0.4 and 1% copper with smaller amounts of other metals such as molybdenum, silver and gold. They are formed when large quantities of hydrothermal solutions carrying small quantities of metals pass through fractured rock within and around the intrusive and deposit the metals.

Porphyry copper deposits are the largest source of copper and are found in North and South America, Europe, Asia, and Pacific islands.

8.3 Epithermal Gold Deposits

The Calaorco Breccia and Ethel Breccia Au oxide mineralisation of La Arena are associated with Epithermal deposit types. Epithermal gold deposits form in hydrothermal systems related to volcanic activity. These systems, while active, discharge to the surface as hot springs or fumaroles.

Epithermal gold deposits occur largely in volcano-plutonic arcs (island arcs as well as continental arcs) associated with subduction zones, with ages similar to those of volcanism. The deposits form at shallow depth, <1km, and are hosted mainly by volcanic rocks.

There are two end-member styles of epithermal gold deposits, high sulfidation (HS) and low sulfidation (LS). The two deposit styles form from fluids of distinctly different chemical composition in contrasting volcanic environment. The Calaorco and Ethel breccia deposits are of the LS style.

9 MINERALIZATION

The tectonic feature of the La Arena property is dominated by a main fault oriented NW-SE and an overturned anticline emplaced along the same structural trend which seems to control the locations of the main intrusive porphyries and mineralisation. Two other major structural trends are developed in the region and are expressed through visible faults or major lineaments and/or evidenced by the presence of intrusive bodies and altered areas in the NE-SW and N-S directions.

La Arena occurs as Au-Ag mineralisation within a quartzite cap to a porphyry Au-Cu intrusion:

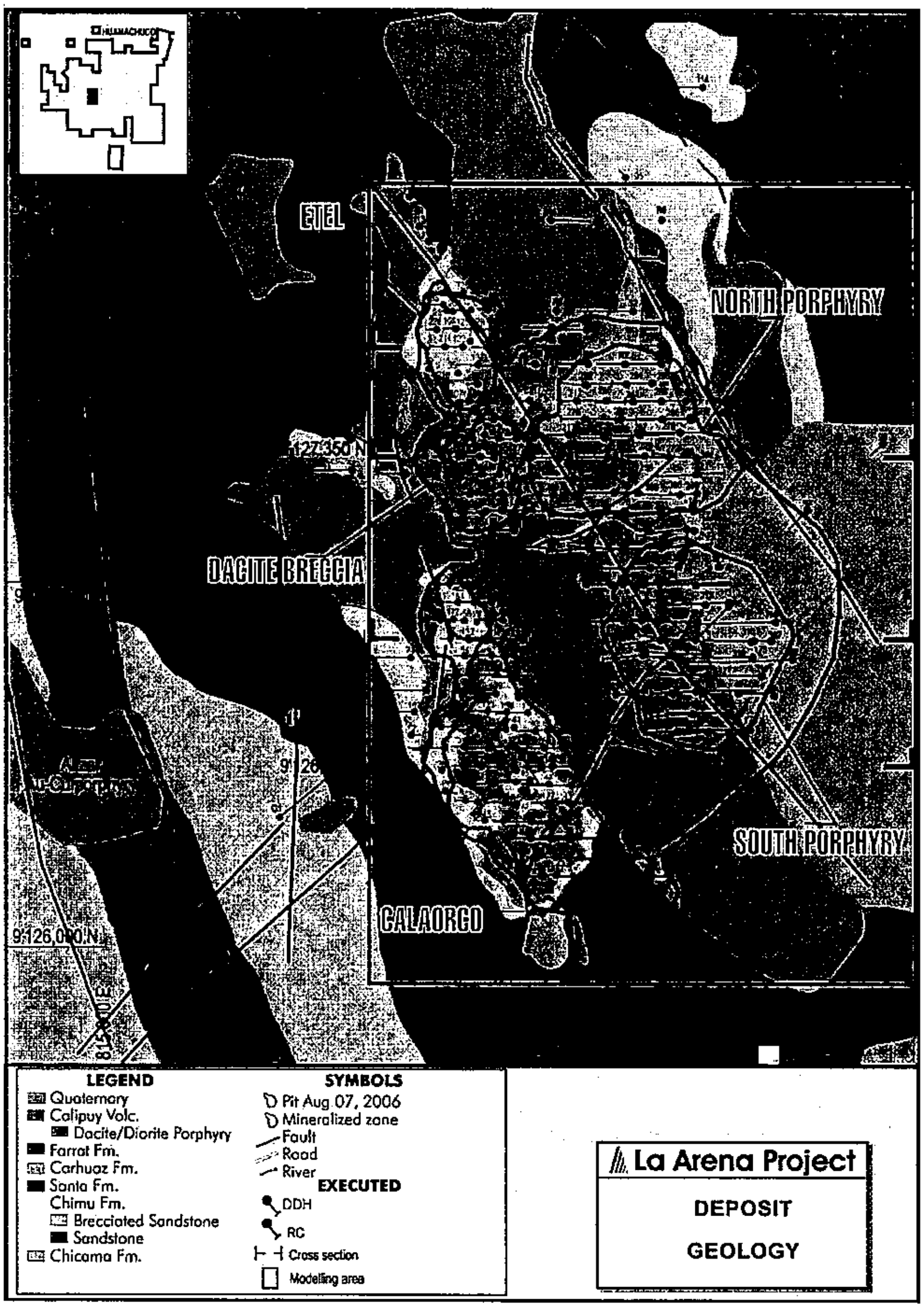
- Calaorco Breccia - Au oxide mineralisation mainly occurring in sandstone breccia and fractured sandstone.
- Ethel Breccia – smaller body of Au oxide mineralisation located in the northern portion of La Arena.
- North Porphyry - mostly made up of secondary and primary Au-Cu mineralisation in diorite porphyry located southeast of Ethel.
- South Porphyry - main body of primary Au-Cu mineralisation in diorite porphyry, with minor secondary and oxide mineralisation.
- Dacite Breccia – secondary and primary Cu mineralisation in dacitic porphyry located between Calaorco and Ethel.

The La Arena geology and drill patterns are shown in Figure 9_1. The vast majority of drilling has been completed on east-west sections, with a small number of holes intersecting the mineralisation along other directions.

The mineralisation extends 2.2km north-south (9,125,900mN to 9,128,100mN), 1.1km east-west (815,700mE to 816,800mE) and 900m in elevation (2,700mRL to 3,600mRL). Continuity of the mineralisation is generally excellent and improves with lower grade cutoffs, which is characteristic of this type of deposit.

Alteration associated with the epithermal gold mineralisation of the Calaorco and Ethel Breccias has been described by site geologists as argillic alteration, advanced argillic alteration, and silicification.

Figure 9_1
La Arena Geology and Drill Patterns



Epithermal Au mineralisation occurs adjacent to the Au-Cu porphyry along sedimentary-intrusive contacts and roof pendant areas. The mineralisation is largely oxidised. Mineralisation styles have been subdivided into:

- Sandstone-quartzite breccia - high Au grades and anomalous As and Sb. Pods of mineralisation are developed around fingers of porphyry.
- Dacite porphyry breccia - moderate Au grades.
- Hydrothermal breccia - vertical pipe-like character (Ethel Breccia) and moderate to isolated high Au grades.
- Colluvial deposits - in the north and south extremities of the Calaorco Breccia, with moderate and anomalous Au grades.

The quartzite-sandstone sequence that hosts the Calaorco Breccia dips moderately to the east. This direction has been interpreted by Iamgold to control the Au mineralisation. However, surface mapping has identified a NE trending breccia-fracture system, which according to Corbett (2004) may be the main host to the Au mineralisation and thereby provide a sub-vertical control to the mineralisation.

Alteration associated with the Au-Cu porphyry has been described as potassic zone, phallic alteration, intermediate argillic alteration, propylitic alteration, and argillic alteration.

Porphyry Au-Cu mineralisation is associated with a quartz-sulphide stockwork zone, with little to moderate oxidation. Three mineralisation events have been recognised by site geologists, namely a weak pre-mineral event, a strong early-mineral event, and a moderate late-mineral event. Mineralisation styles have been subdivided into:

- Oxide zone - contains Au mineralisation associated with goethite and hematite, with Cu content leached down to 300ppm. It is up to 40m deep in the North Porphyry and hardly exists in the South Porphyry.
- Secondary zone - enriched with Cu, mainly in the form of chalcosite. Its thickness varies from 20m in the North Porphyry to 5m in the South Porphyry.
- Primary zone - carries most of the Au-Cu mineralisation, typically in quartz-pyrite-chalcopyrite and sporadic molybdenite.

Several vein types have been described for the porphyry mineralisation at La Arena. Earliest "A" type veins generally consist of quartz only, have diffuse margins, and often correlate with the strongest Au grades. They are cut by B type quartz-sulphide veins that are often banded or have sulphide developed along their axes. Subsequent D type pyrite veins cut all other veins.

The porphyry complex has been interpreted by Iamgold to dip steeply to the east and display an upward flaring geometry (many holes are inclined to the west). Meldrum (2005) suggests that geometries of vertical cylinders or cupolas and clustering may be more appropriate.

Two post-mineralisation dykes cross-cut the units, one associated with moderate disseminated pyrite and the other sterile and andesitic.

10 EXPLORATION

Accumulated drilling over the La Arena deposit area totalled 59,991m in 351 holes and 4,120m for 60 trenches, as is discussed in following sections. In addition to the La Arena development project, the property includes several prospects that have been defined by a combination of soil geochemistry and exploration diamond drilling. (i.e. Cerro Colorado, El Alizar porphyry, Agua Blanca epithermal and porphyry, Pena Colorado and La Florida).

Most exploration has been focused on the La Arena deposit. Additional mineral occurrences and geochemical anomalies have been identified in the wider area of the property, but all have very limited drilling.

Four anomalies have been identified at La Florida in the southern part of the property:

- The Huangacocha Au anomaly in Chimu sandstone has been explored by 10 E-W orientated diamond core holes over a strike extent of 0.5km. The best holes intersected 84m @ 0.6g/t Au (DDH09), 64m @ 1.0g/t Au (DDH13), 26m @ 0.5g/t Au (DDH20), 12m @ 1.0g/t Au (DDH12) and 12m @ 0.2g/t (DDH19). Highest sample grades are 9.1g/t Au (DDH09) and 8.7g/t Au (DDH13). Sludge return grades at 5m intervals were as high as 41.4g/t Au (DDH12). The mineralisation appears to correlate to ENE structural breccia zones of up to 20m wide. Outcrop at Huangacocha ends in terminal moraine to the north.
- The Paloquiam Cu anomaly has been explored by 2 diamond core holes (DDH11 and DDH21), but no significant intercepts were found.
- The South Au anomaly in breccia and strongly fractured siltstone has been explored by 2 diamond core holes and by 10m spaced channel samples in a 120m road cut. One hole returned 20m @ 0.2g/t Au (DDH01), and the other hole returned a highest assay of 0.39g/t Au. Favourable grades (>1g/t Au) were encountered in the road cut sampling.
- The North Au anomaly in steeply fractured sandstone and minor siltstone has been explored by 2 diamond core holes. The highest sample grade was 0.46g/t Au. The highest grade in surface samples was 0.8g/t Au. Sludge return samples had insignificant Au grades. According to Iamgold the drill direction was sub-optimal.

Agua Blanca is both an epithermal (breccia) and porphyry (dacite) target. Six holes were drilled at the prospect, 3 diamond core holes and 3 reverse circulation holes. The best hole was an RC hole drilled towards the SSW, with 70m @ 0.7g/t Au. Limited sampling of the outcrop has been conducted to date. Arsenic values are high, up to 1.86% As.

Exploration surveys and interpretations completed to date within the La Arena project have largely been planned, executed and supervised by expatriate and national Cambior personnel, supplemented by consultants and contractors for more specialised or technical roles. The data is considered to be of good quality (Sections 11 to 14).

The exploration targets are considered to readily justify further exploration and have the potential to significantly add to the resource inventory of the La Arena Project.

11 DRILLING

11.1 Introduction

The principal methods used for exploration drilling at La Arena have been diamond core drilling (DDH) and reverse circulation percussion drilling (RC). In addition, 60 surface trenches were completed, totalling 4,120m in length.

Table 11.1_1 summarises pertinent drilling statistics. The deposit has been drilled at a nominal spacing of 50m in the brecciated sandstone and 65m in the porphyry.

Table 11.1_1
La Arena Project
Summary Drilling Statistics

Total drillholes	351	Total metres drilled	59,991
RC holes	11	RC metres	1,186
Diamond holes	340	Diamond core metres	58,805
Core samples	29,017	RC samples	592

11.2 Drilling Procedures

11.2.1 Diamond Drilling Procedures

All diamond drilling was completed by Sociedad Minera Cambior Peru S.A (SMCP). Most diamond core holes were drilled HQ diameter and about 40% of the holes were drilled NQ diameter from 1999 to 2005.

Based upon inspection of core trays of 5 holes and review of the available reports, Coffey Mining considers that diamond core drilling has been carried out to expected industry standards.

11.2.2 Reverse Circulation Drilling Procedures

A total of 11 reverse circulation holes (1,186m) were completed by AK Drilling. The production rate was reported as poor due to bad ground conditions and abundant underground water. Limited RC drilling was also tested on the La Arena porphyry with reportedly better production and recoveries.

The poor recoveries described in the RC drilling has resulted in lower confidence in this data and further RC drilling was not undertaken.

11.3 Drilling Orientation

Drillholes were generally drilled to the west at between 60 to 70 degrees dip. Holes were targeted to perpendicularly intersect the main trend of mineralisation. The La Arena deposit has been drilled at a nominal spacing of 50m in the brecciated sandstone and 65m in the porphyry.

The three-dimensional modelling methods applied in resource estimation accurately reflect the morphology of the mineralised zones.

11.4 Surveying Procedures

11.4.1 Accuracy of Drillhole Collar Locations

Drillhole collars were surveyed by Eagle Mapping Ltd. using total station and differential GPS. Survey accuracy is reported as +/-0.5m.

Accuracy of the survey measurements meets acceptable industry standards.

11.4.2 Downhole Surveying Procedures

Prior to the 2005 drilling campaign, holes were surveyed using acid test every 50m. This method uses acid, in a glass test tube, the acid etching the tube and indicating the inclination or dip of the hole. It is carried out by lowering the tube down the hole to the desired depth, for each reading. Magnetic azimuth readings are not obtained by this method.

Also tropari survey measurements are noted in the drillhole logs. A tropari is a directional surveying instrument that gives inclination and magnetic azimuth and can be used in open holes or through rods 36mm (1.40 inches) or larger. Accuracy to +/-0.5 degrees is claimed by the manufacturer.

After hole 172, down-the-hole surveys were collected with a SingleSmart Flexit tool with a reported accuracy of +/-0.2 degrees, recording both dip and azimuth. Real-time recording tools were used from 2007 onwards.

Accuracy of the down-the-hole survey measurements meets acceptable industry standards. Post acid test holes were found to deviate in azimuth by an average 3.2° and have a tendency to steepen in dip by an average 2.9°. Sample locations in all holes, including acid test holes for which no azimuth data is available, are considered by Coffey Mining to have been determined with sufficient accuracy for the purpose of resource estimation.

12 SAMPLING METHOD AND APPROACH

12.1 Diamond Core Sampling

HQ and NQ diameter diamond core was sampled at lengths on average of 2m. During earlier exploration programs the core was chiselled in half. More recently the core was cut lengthways with a diamond saw and half-core was sent for assay. Samples were numbered and collected in individual 30mils 10 by 15 inch plastic bags with sample tag. Each sample batch was made up of approximately 73 samples, including 2 quality control blanks, 2 standards and 2 field duplicates. Each work order consisted of a rice bag with samples along with an order list of which one copy was sent to the laboratory in Lima and another copy retained on site. Bags were closed with tie-wraps.

Core mark-up and sampling has been conventional and appropriate. Core is not orientated for structural measurements, which is considered an unfortunate omission.

Core inspection by Coffey Mining showed that some holes contain uncut core billets of approximately 10cm long that have not been sampled, presumably for geotechnical stress testing and/or bulk density determinations.

12.2 Reverse Circulation Sampling

RC samples were collected at 2m intervals and quartered in riffle splitters. Sub-samples weighed approximately 2kg and were collected in cloth-lined sample bags.

Wet sample procedures, sample and reject storage, and sample security were not documented in the reports made available to Coffey Mining.

12.3 Surface Trench Sampling

Digging and sampling procedures for the surface trenches were not available. The trench data was used in a very broad manner to help model the mineralised zones, but was not included in the actual resource estimation.

12.4 Logging

Diamond core was logged in detail for geological, structural and geotechnical information, including RQD and core recovery. Whole core was routinely photographed. Review by Coffey Mining of selected geological logs against actual core showed no significant discrepancies or inconsistencies.

Diamond core and RC chip logging have been conventional and appropriate.

Core recovery has been recorded for all drill holes at 2m intervals. Core recovery is generally 90-95% or higher and infrequently 70-80% or less. The lower recoveries occur mainly in the more weathered, upper parts of the deposit.

13 SAMPLE PREPARATION, ANALYSES AND SECURITY

13.1 Sample Security

Reference material is retained and stored on site, including half-core and photographs generated by diamond drilling, and duplicate pulps and residues of all submitted samples. All pulps are stored at the La Arena exploration camp.

13.2 Sample Preparation and Analysis

The flow sheet for drill core sample preparation and analysis is included as Figure 13.2_1. Samples were digitally weighed, dried to a maximum of 120ºC (for wet samples), crushed to 70% < 2mm (10 mesh), riffle split to 250g, and pulverised to 85% < 75µm (200 mesh). 50g pulps were submitted for chemical analysis. These procedures were in place since 2003.

The sample preparation methods for the samples submitted prior to 2003 are not documented in the reports made available to Coffey Mining.

Chemical analysis at the primary laboratory (ALS Chemex since 2005) and the secondary laboratory (CIMM Peru) consisted of fire assay (FA) with atomic adsorption spectrometry (AAS) finish, using 50g sub-samples. Those samples that analysed≥ 5g/t Au were analysed using gravimetric methods

For Cu and Ag (and Mo, Pb, Zn, As, Sb and Bi) multi-acid (four) digestion AAS was used. Hg was analysed using cold vapour AAS. Until the end of 2004 the core samples from drillholes 1 to 125 were processed by CIMM Peru as the primary laboratory. The assay methods for the samples submitted prior to 2005 are not documented in the reports made available to Coffey Mining.

13.3 Adequacy of Procedures

Of the dry, crushed samples 3% of each batch were 2mm sieve tested by ALS Chemex, usually the first samples of a batch. Crusher jaws were calibrated and the crushing time adjusted if the test samples did not meet the criteria. A same percentage of sample pulps were tested for passing 75µm and the pulverization was repeated if deemed inadequate.

Typical results for the size testing of crushed and pulverised samples are shown in Figure 13.3_1 and Figure 13.3_2, respectively.

Sufficient quality control data exists in report format to allow a review of the analytical performance of the assay laboratories from 2004 onwards (see Section 14).

Figure 13.2_1
La Arena Core Sample Preparation and Analysis

Flow sheet for drill Core sampling, Sample Preparation and Analysis

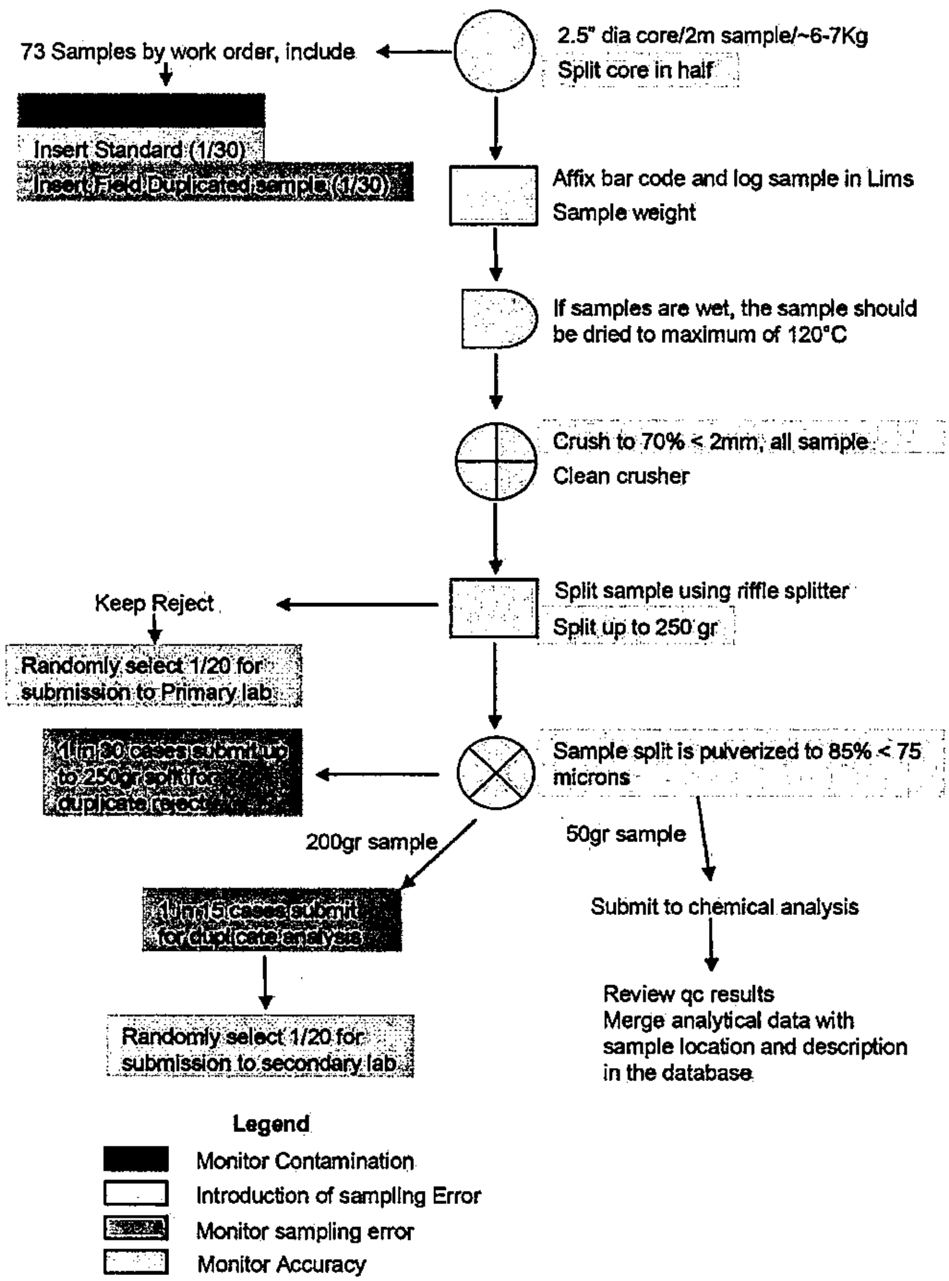


Figure 13.3_1
Typical Size Testing Results for Crushed Samples

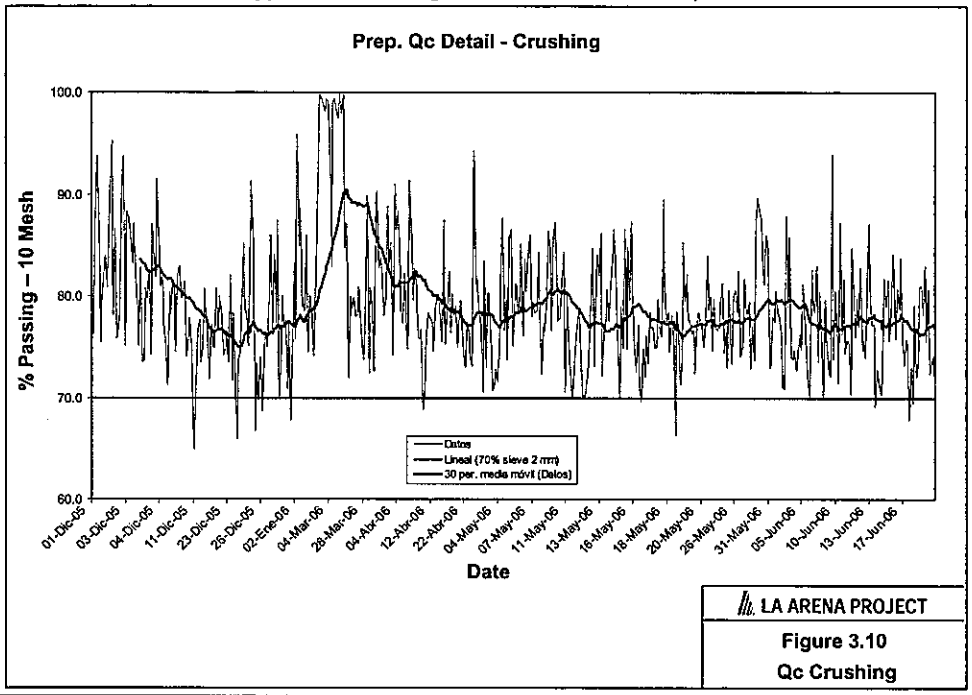
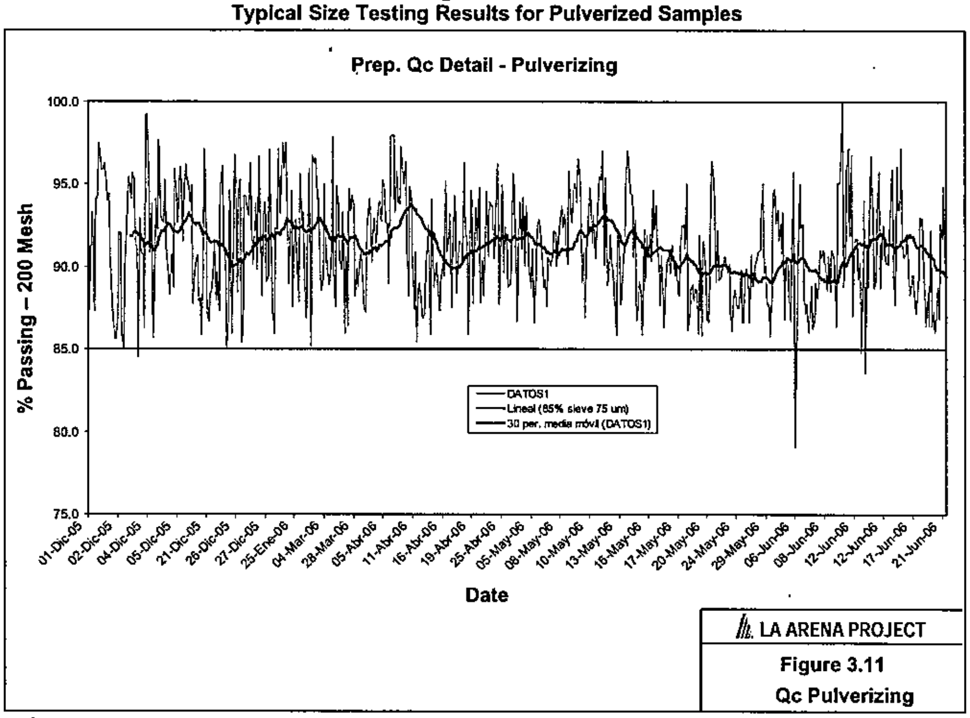


Figure 13.3_2
Typical Size Testing Results for Pulverized Samples



14 DATA VERIFICATION

14.1 Analytical Quality Control Procedures

Until the end of 2004 the core samples from drillholes 1 to 125 were processed by CIMM Peru as the primary laboratory.

In June 2004 a rigorous QAQC program was implemented and consisted of:

- Standards and blanks inserted at a rate of 1:30.
- Field duplicates inserted at a rate of 1:30.
- Coarse (crushed) rejects submitted to the primary laboratory at a rate of 1:20.
- Pulp rejects submitted to the primary laboratory at a rate of 1:30.
- Pulp duplicates submitted to the primary laboratory at a rate of 1:15.
- Pulp duplicates submitted to secondary laboratory at a rate of 1:20.

Internal quality control by the laboratory consisted of 2 standards, 2 blanks, 2 duplicates from sample rejects, and 2 laboratory duplicates. ALS Chemex is an international company that has an ISO 9001:2000 certification at all their laboratories.

Coffey Mining reviewed the results obtained for standards, blanks, rejects and duplicates as presented in the graphs in the Appendix to the La Arena Pre-feasibility Study (November 2006) (PFS) and has no significant concerns about accuracy and precision that have been achieved since 2004 (see below).

There appears to have been no routine quality control program for the La Arena sampling and assaying prior to 2004.

14.2 Routine Independent Quality Control

14.2.1 Standards

One standard reference material (LAOx-2) was included in the sample stream analysed by CIMM Peru laboratories during the trench sampling campaign in 2004. From January 2005 four different standards were used for independent quality control of analyses by the primary laboratory (ALS Chemex in Lima) and secondary laboratory (CIMM Peru). The standards were prepared with material from La Arena and certified by the ALS Chemex – La Serena Chile laboratory on the basis of round robin analyses.

Statistics for the certified standards are included in Table 14.2.1_1.

Table 14.2.1_1
Certified Elements Standards

Standard	Au ppb				Cu ppm			
	Mean	+2SD	-2SD	RSD%	Mean	+2SD	-2SD	RSD%
LAOx-1	396	425.5	366.5	3.7	203.6	216.7	190.5	3.2
LAOx-2	798.8	855.6	742.1	3.6	114.6	121.6	107.5	3.1
LAOx-3	2381.6	2628.4	2134.8	5.2	294.9	313.3	276.6	3.1
LASUL-1	344.2	370.4	318	3.8	5344.8	5706.7	4983	3.4
Standard	**Hg ppb**				**As ppm**			
	Mean	**+2SD**	**-2SD**	**RSD%**	**Mean**	**+2SD**	**-2SD**	**RSD%**
LAOx-1					278.2	312.8	243.6	6.2
LAOx-2	2143.8	2435.8	1851.7	6.8	452.5	489.4	415.7	4.1
LAOx-3	4761.9	5170.3	4353.6	4.3	768.4	814.6	722.1	3

Certified Au and Cu results prepared by Iamgold for the standards submitted during the period 2004-2006 are presented in Figures 14.2.1_1, 14.2.1_2, 14.2.1_3 and 14.2.1_4 for standards LAOx-1, LAOx-2, LAOx-3 and LASUL-1, respectively.

In general Au tends to be slightly over-estimated and Cu tends to be slightly under-estimated, though generally within 2 Standard Deviation limits. Coffey Mining has not reviewed the round robin results for the standards.

Coffey Mining is satisfied that the level of accuracy achieved by the primary assay laboratories (CIMM Peru and ALS Chemex) is within industry accepted limits.

14.2.2 Blanks

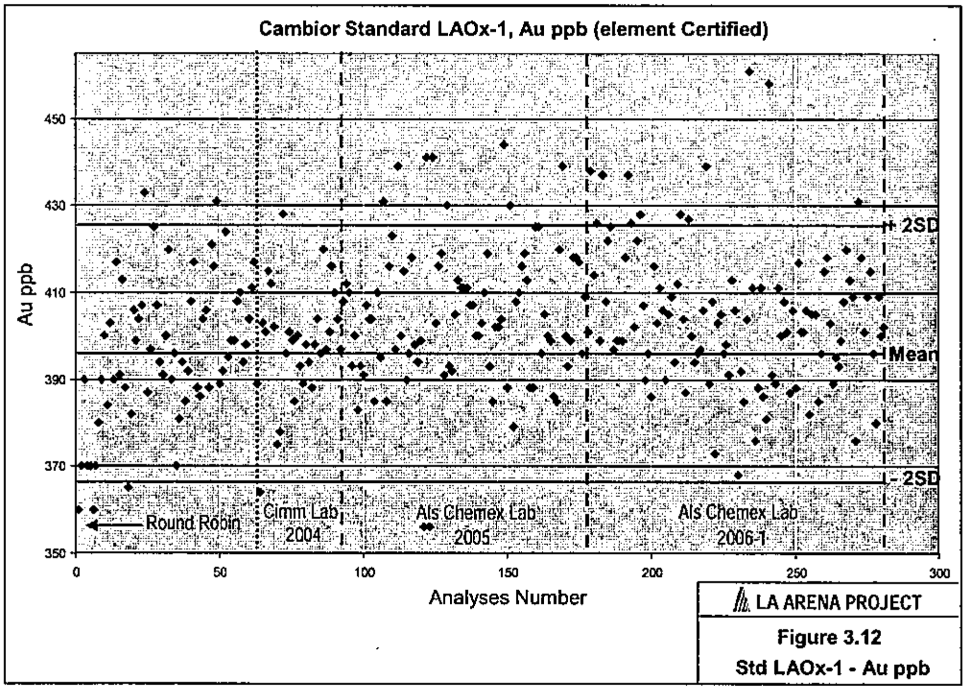
Blanks inserted into the sample stream since 2004 were obtained from sterile areas located near the La Arena project. Material from three zones was used, one of which was in the oxide zone (LABLK-1) and the other two in the sulphide zone (LABLK-2 and LABLK-3). The last blank was only used during the first half of 2006. Assay tests on the blanks to confirm their barren nature reportedly returned low values.

Au and Cu results prepared by Iamgold for the blanks are presented in Figures 14.2.2_1, 14.2.2_2 and 14.2.2_3 for blanks LABLK-1, LABLK-2 and LABLK-3, respectively.

Au values tend to be at the lower detection limit with a few spikes, but never above 100ppb (0.1g/t). Cu values fluctuate around 10-20ppm for LABLK-1, around 30-40ppm for LABLK-2, and 10-25ppm for LABLK-3, but are never above 100ppm (0.01%). Coffey Mining has not reviewed the round robin results for the blanks.

Coffey Mining is satisfied that the level of accuracy as indicated by the blanks, which monitor both sample preparation and chemical analysis, is within industry accepted limits.

Figure 14.2.1_1
Standards Results for LAOx-1



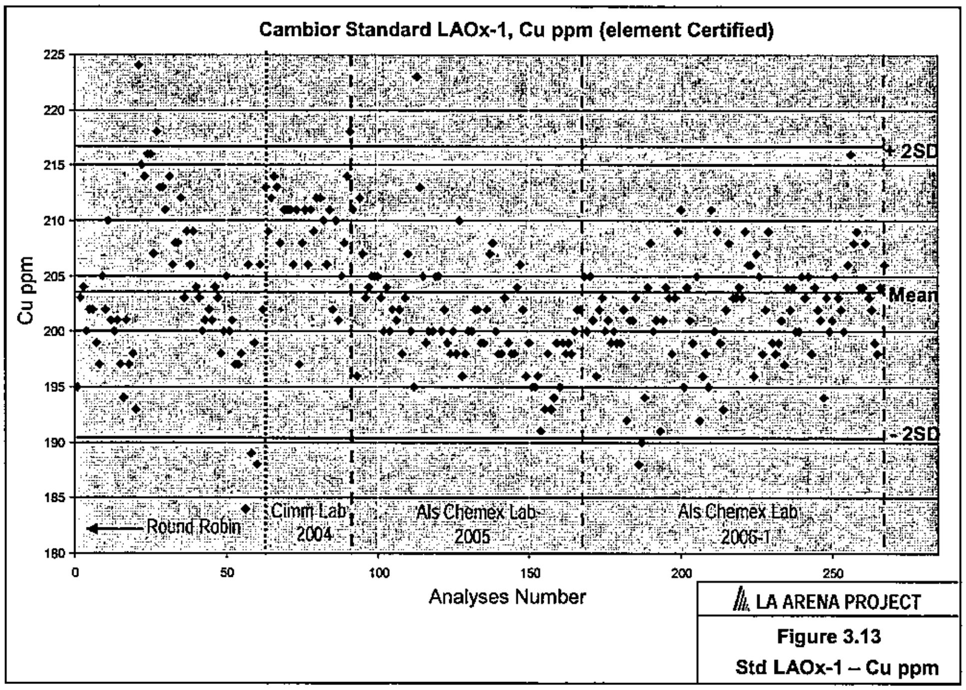


Figure 14.2.1_2
Standards Results for LAOx-2

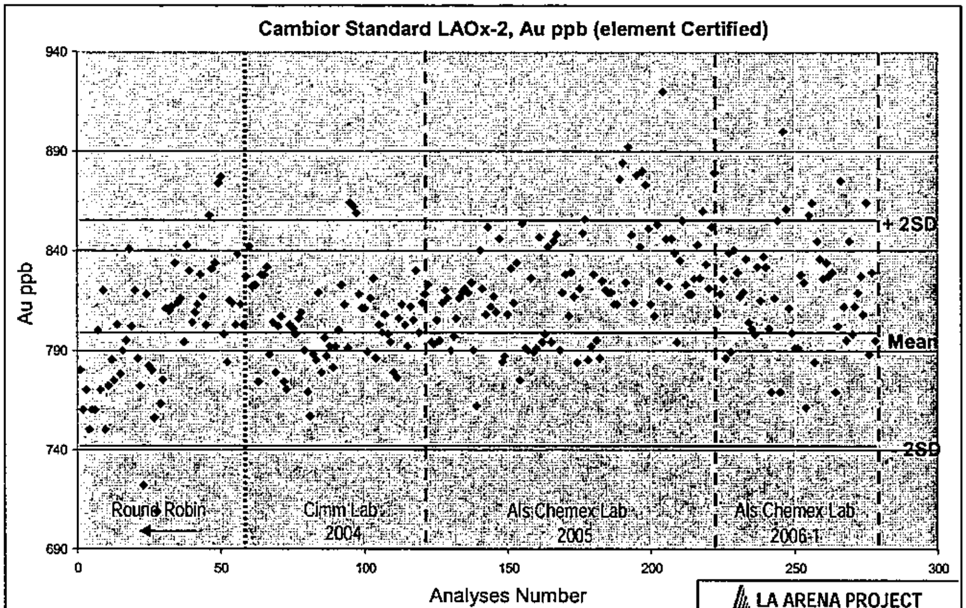


Figure 3.14
Std LAOx-2 - Au ppb

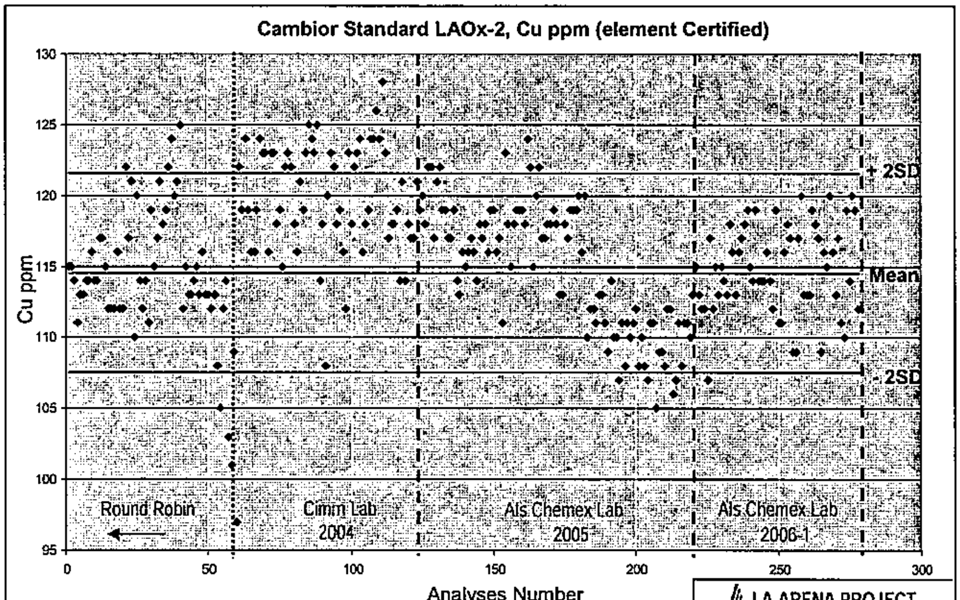
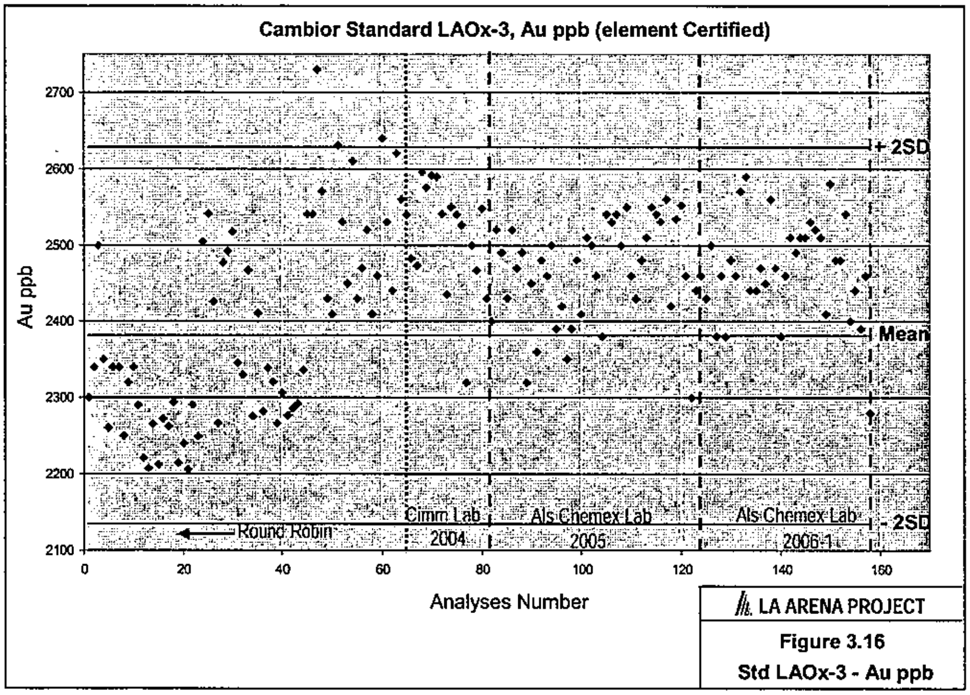


Figure 3.15
Std LAOx-2 – Cu ppm

Figure 14.2.1_3
Standards Results for LAOx-3



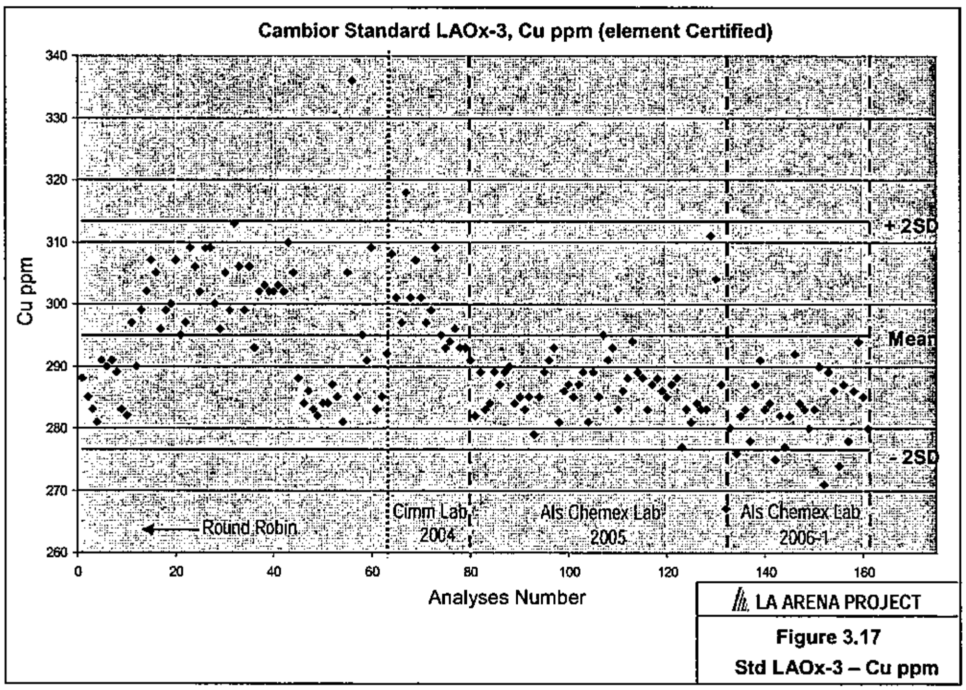


Figure 14.2.1_4
Standards Results for LASUL-1

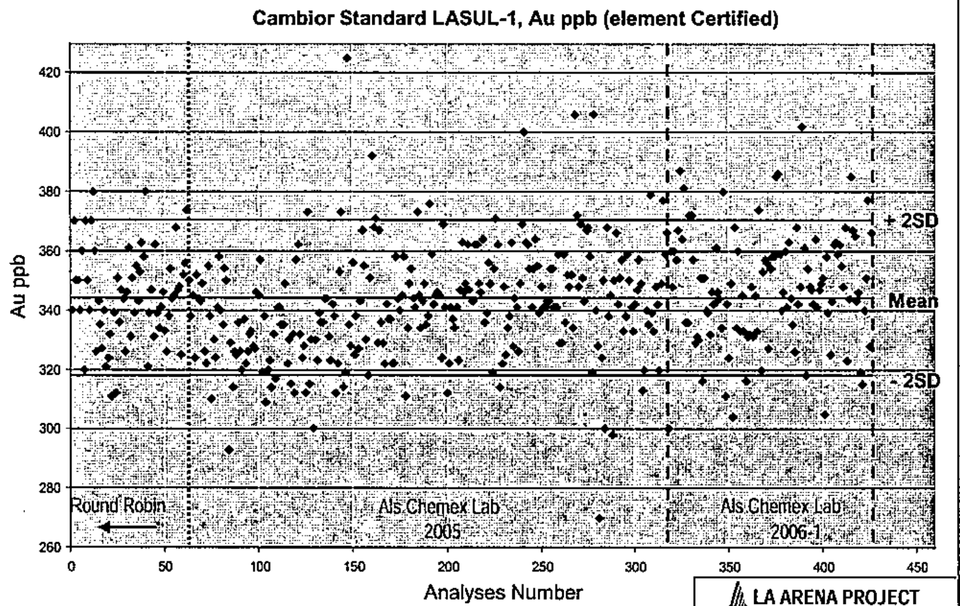


Figure 3.18
Std LASUL-1 - Au ppb

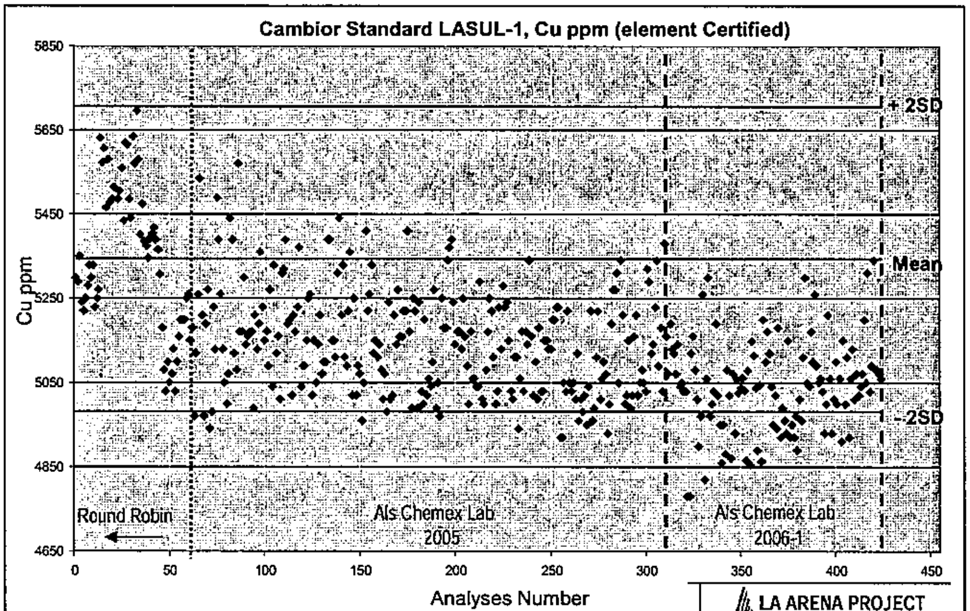
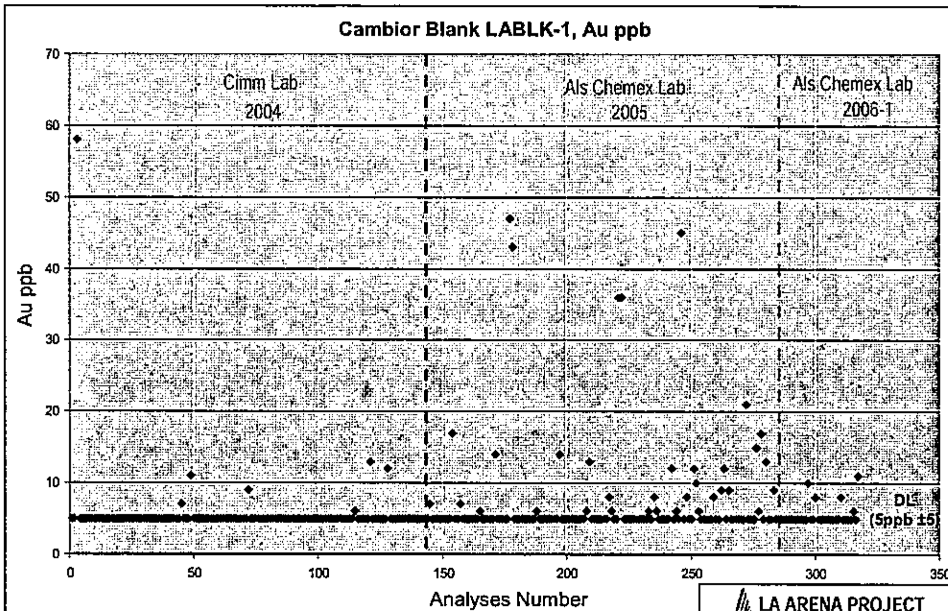
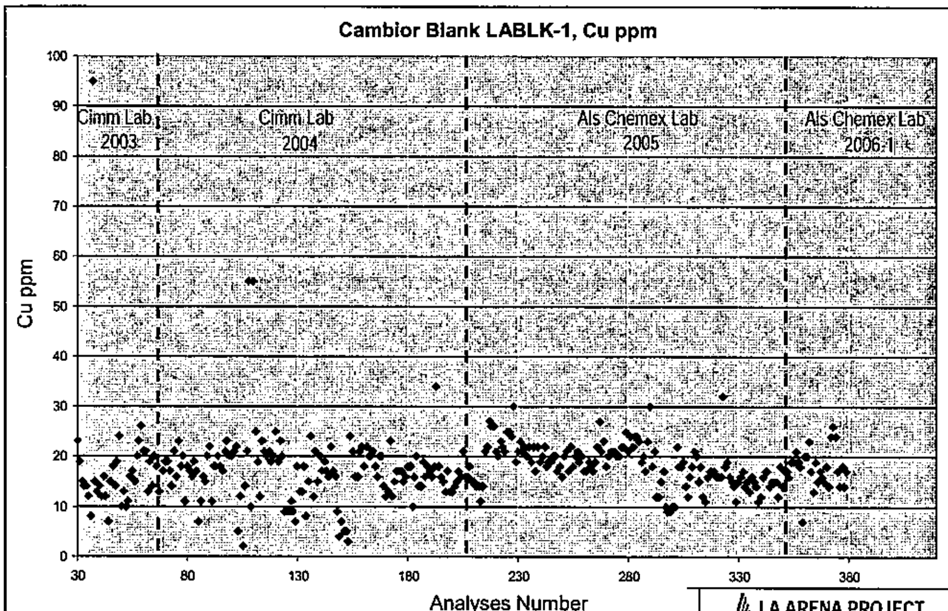


Figure 3.19
Std LASUL-1 – Cu ppm

Figure 14.2.2_1
Blanks Results for LABLK-1

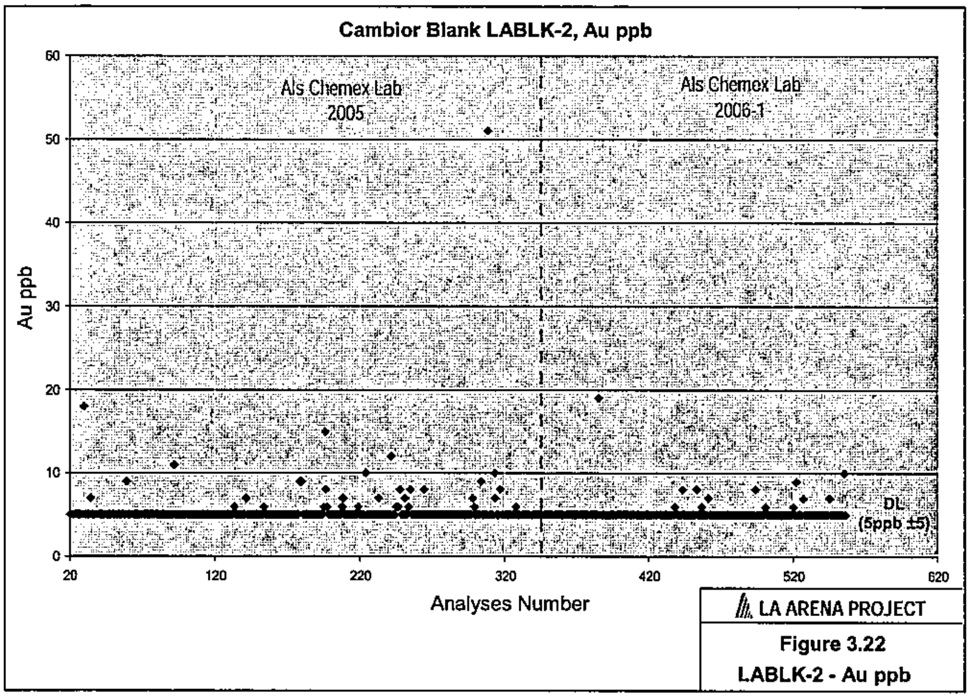


LA ARENA PROJECT
Figure 3.20
LABLK-1 - Au ppb



LA ARENA PROJECT
Figure 3.21
LABLK-1 – Cu ppm

Figure 14.2.2_2
Blanks Results for LABLK-2



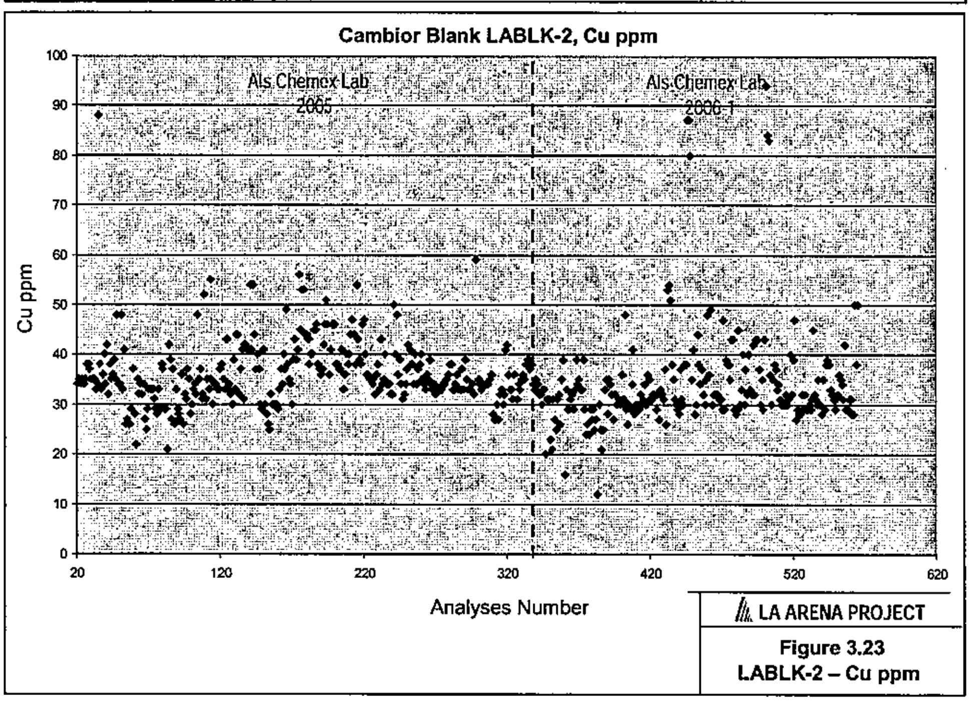
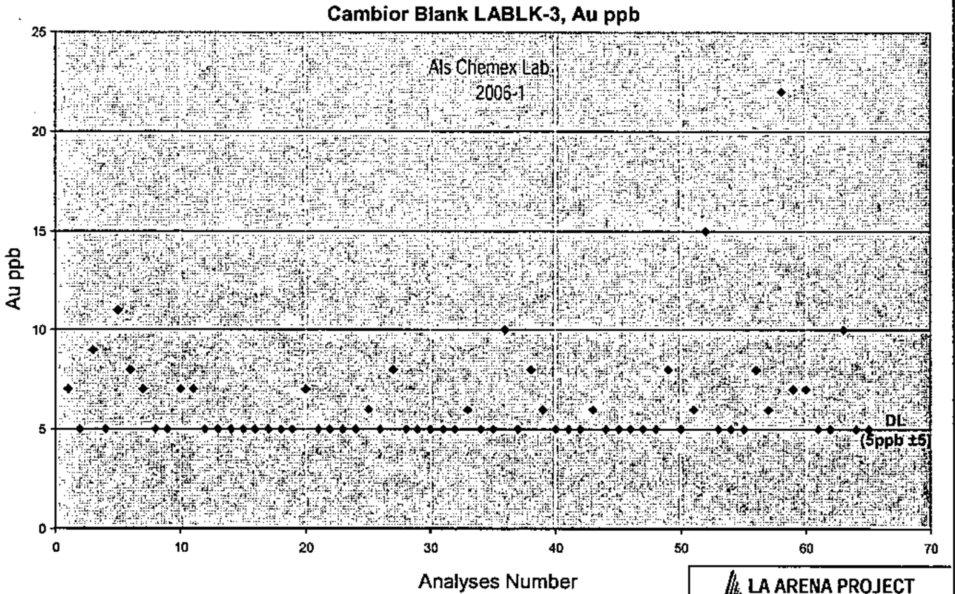
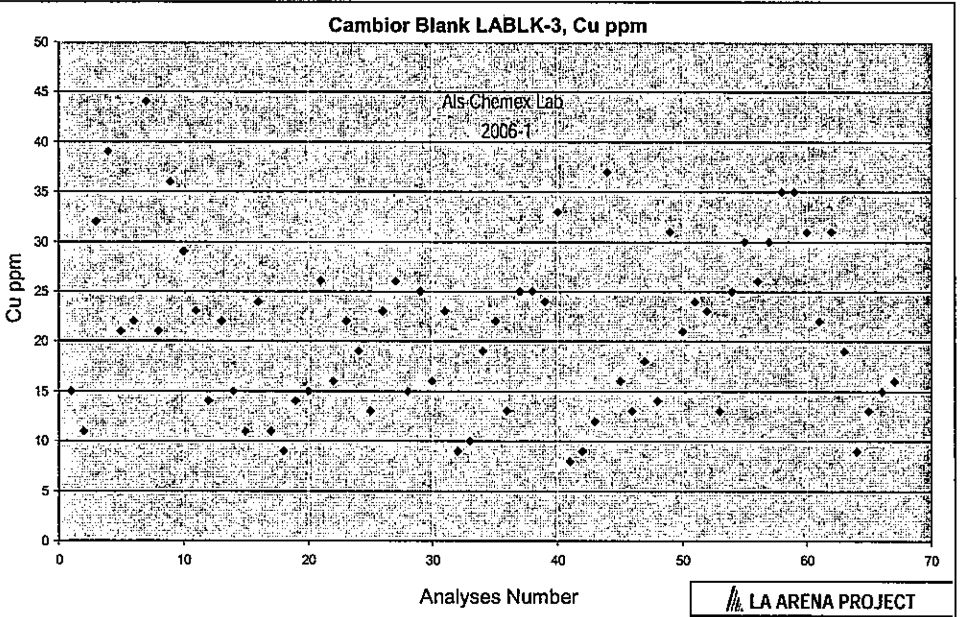


Figure 14.2.2_3
Blanks Results for LABLK-3



LA ARENA PROJECT
Figure 3.24
LABLK-3 - Au ppb

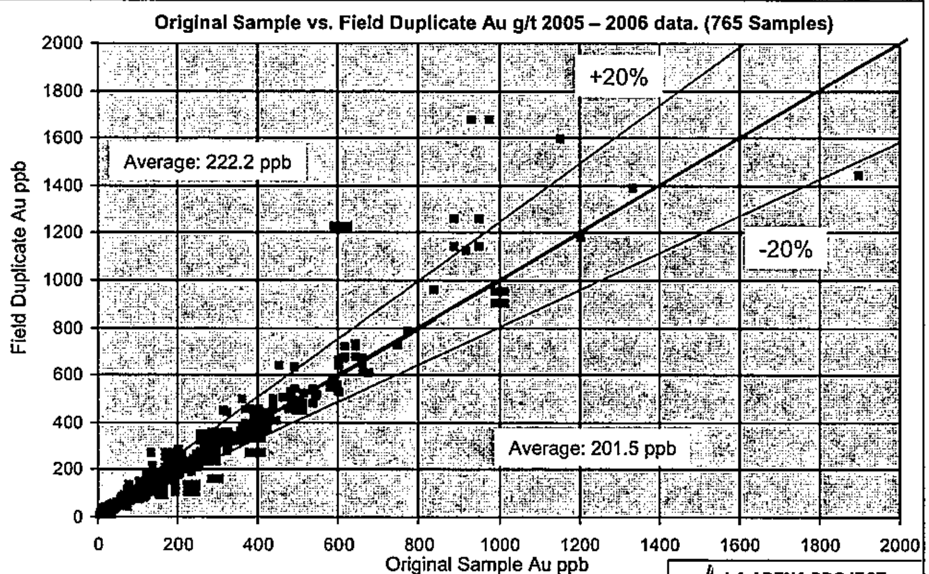


LA ARENA PROJECT
Figure 3.25
LABLK-3 – Cu ppm

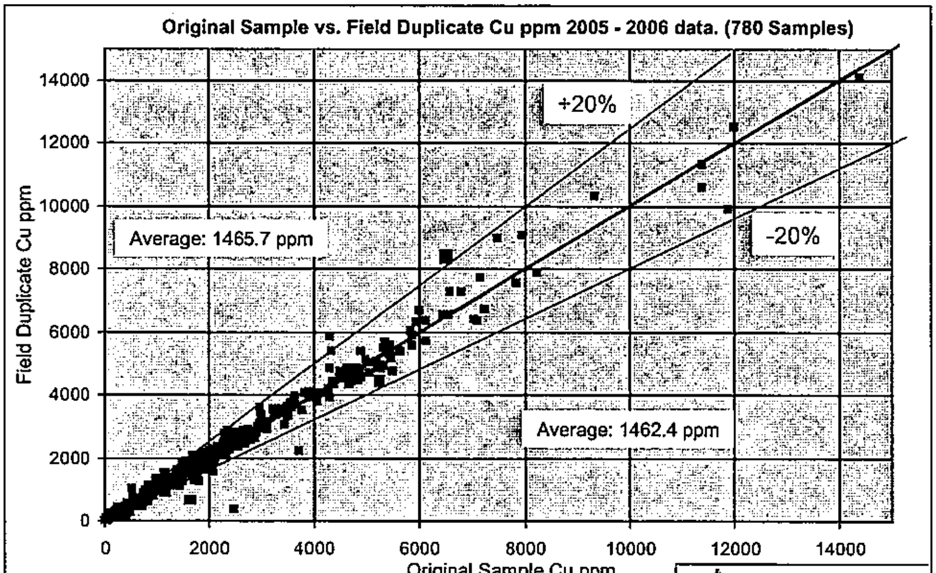
14.2.3 Field Duplicates

Field duplicates were selected by the geologists during core logging to determine the nature of mineral dispersion and the quality of sampling. The results for 2005 to 2006 are presented in Figure 14.2.3_1.

Figure 14.2.3_1
Field Duplicates Results



LA ARENA PROJECT
Figure 3.26
Field Duplicate Au



LA ARENA PROJECT
Figure 3.27
Field Duplicate Cu

In the majority of the cases in which a difference of over 20% between the original sample and the field duplicate was detected it was determined that this was produced by the heterogenic distribution of the mineralisation in the core.

Coffey Mining is satisfied that the level of precision as indicated by the field duplicates is within industry accepted limits.

14.3 Laboratory Internal Quality Control

14.3.1 Coarse (Crushed) Rejects

On every work order that was sent to the primary laboratory the two samples to be re-analysed as duplicates from sample reject were specified. The results for 2005 to 2006 are presented in Figure 14.3.1_1.

Coffey Mining is satisfied that the level of precision as indicated by the field duplicates is within industry accepted limits.

14.3.2 Laboratory Duplicates

For every work order the laboratory selected five to eleven sample pulps to be re-analysed. The results for 2005 to 2006 are presented in Figure 14.3.2_1.

Coffey Mining is satisfied that the level of precision plus accuracy as indicated by the field duplicates is within industry accepted limits.

14.3.3 Laboratory Standards and Blanks

As part of its internal quality control the primary laboratory has inserted standard and blank reference materials into the sample stream. The results provided to Iamgold were reviewed by Coffey Mining.

Coffey Mining is satisfied that the level of accuracy as indicated by the laboratory's own standards and blanks is within industry accepted limits. It should be noted, however, that laboratories may not (always) provide clients with accurate results from this kind of quality control.

Figure 14.3.1_1
Coarse (Crushed) Rejects Results

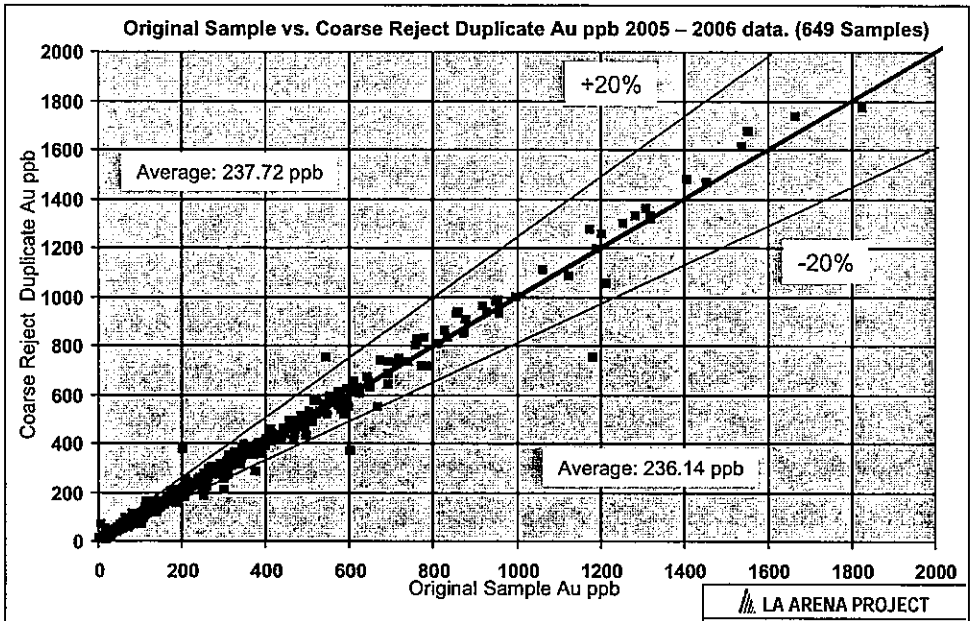


Figure 3.28
Coarse Reject Duplicate Au

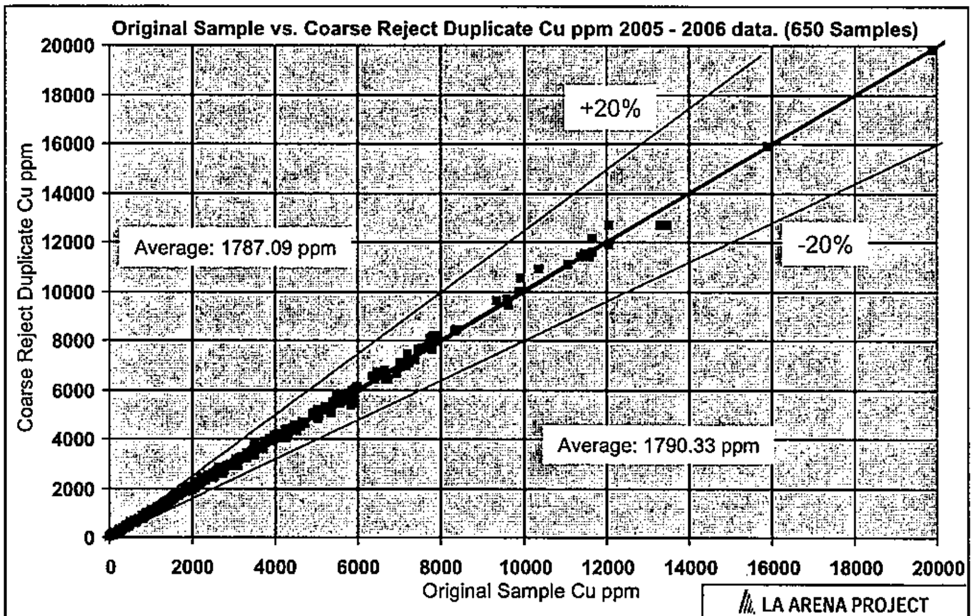
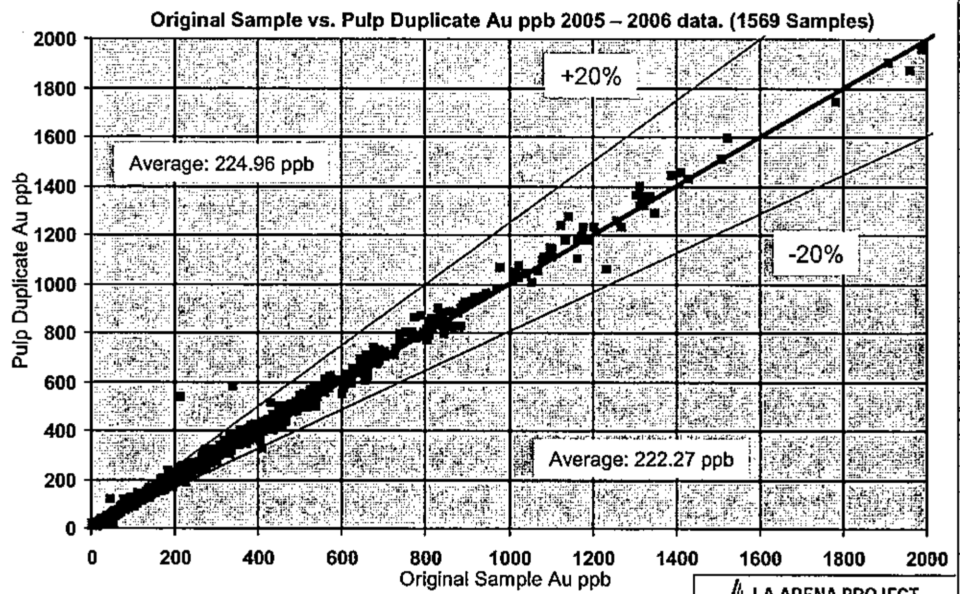
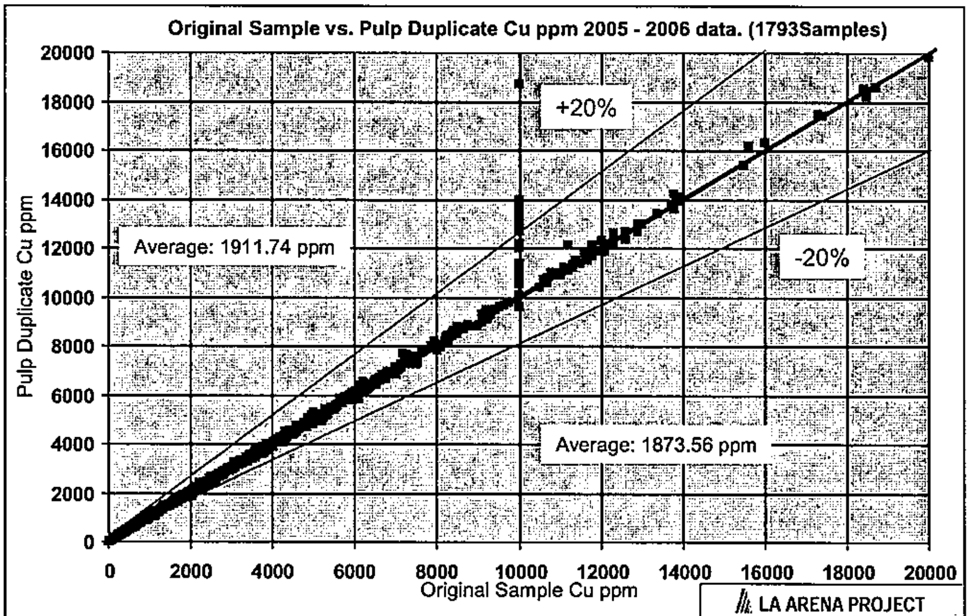


Figure 3.29
Coarse Reject Duplicate Cu

Figure 14.3.2_1
Laboratory Duplicates Results



LA ARENA PROJECT
Figure 3.30
Pulp Duplicate Au



LA ARENA PROJECT
Figure 3.31
Pulp Duplicate Cu

14.4 Miscellaneous Quality Control

14.4.1 Period 1997 to 1999

As part of its internal quality control the primary laboratory has inserted standard and blank in 1997, 30 samples were submitted to American Assays Laboratory in Lima for quality control. The results showed that, on average, the CIMM Peru results for Au were 13.7% higher than the American Assays Laboratory results.

In February 1998, 252 duplicates reject samples assayed at CIMM Peru were submitted to SGS Laboratory in Lima. Subsequently, 118 reject samples over 0.3g/t Au from that suite were also sent to Bondar Clegg Laboratory in Lima. A bias of -6.4% was found between CIMM peru and SGS, which was confirmed by a bias of -8.3% between CIMM Peru and Bondar Clegg.

In May 1998, 56 core reject samples grading over 0.3g/t Au were split in 2kg bags and submitted to SGS and Bondar Clegg. Using the same sample protocol as CIMM Peru, a bias of -18.4% was found between CIMM Peru and SGS, with CIMM Peru being lower and the bias between CIMM Peru and Bondar Clegg was lower at -4.3%.

It is difficult to make an assessment of the quality control results from 1997 to 1998 because no independent reference materials were included in the sample stream during that period and sample protocols have not been provided to Coffey Mining. It is therefore not know with certainty if CIMM Peru over or under-estimated the gold content of the samples.

14.4.2 Period 2005 to 2007

Since 2005, at the end of each drilling campaign, 5% of the reject samples were re-sent to the primary laboratory (ALS Chemex) and 5% of the lab samples (pulps) to the secondary laboratory (CIMM Peru) in order to check the results. All samples were re-numbered and quality control standards and blanks inserted into the sample stream at a rate of 1:30. The standards were inserted into the sample stream inside aluminium vacuum-sealed envelopes with a weight of approximately 125g.

In February 2005, 117 pulp samples and 122 reject samples from CIMM Peru were submitted to ALS Chemex. The samples were from the surface trenches and from drillholes 117 to 125. Acceptable levels of precision were reported, i.e. 85% and 89% within 10% difference for Au and Cu respectively in pulps, and 80% within 10% difference for both Au and Cu in rejects.

In April 2005, 86 pulp and reject samples from ALS Chemex were submitted to CIMM Peru. The samples were from drillholes 126 to 175 drilled in 2005 (period I). Acceptable levels of precision were reported, i.e. 82% within 10% difference for both Au and Cu in pulps, and 86% and 90% within 10% difference for Au and Cu respectively in rejects.

In December 2005, 370 pulp samples were re-submitted to ALS Chemex. Both pulps were also sent to CIMM Peru. In addition, 225 rejects of samples grading less than 1.0g/t Au were sent to CIMM Peru. The samples were from drillholes 176 to 264 drilled in 2005 (period II). For the pulps, medium to low levels of precision were reported for Au (72-75% within 10%) and acceptable levels for Cu (90-95% within 10%). Acceptable levels of precision were reported for the rejects (80% for Au and 88% for Cu, both within 10%).

In February 2006, 416 reject samples from CIMM Peru were submitted to ALS Chemex. The samples were from drillholes 1 to 125 drilled between 1996 and 2004. On average, ALS Chemex assayed Au 12.8% higher than CIMM Peru and Cu 10% lower than CIMM Peru. Low levels of precision were reported, i.e. 80% within 30% for Au and 80% within 20% for Cu.

In July 2006, 332 pulp samples were submitted to CIMM Peru and then re-submitted to ALS Chemex. The samples were from drillholes 265 to 332 drilled in 2006 (period I of 2006). Acceptable levels of precision were reported for Au (80% within 10%) and Cu (90-95% within 10%). In addition, 330 reject samples grading less than 0.1% Cu were re-submitted to ALS Chemex. Acceptable levels of precision were reported (85% for Au and 95% for Cu, both within 10%).

14.5 Topography

The topographic surface applied to the resource modelling was prepared using Eagle Mapping controlled digital orthophotos with survey monuments and surveyed collars located within 5km as controls.

The digital terrain model (DTM) was last updated with surveyed points, including drillhole collars, in May 2006. This resulted in elevation corrections of no more than 0.25m.

Coffey Mining considers the topography model is suitable for mine planning purposes.

14.6 Bulk Densities

Bulk densities assigned to the resource estimates were derived by Iamgold from four different sources:

- Nearby projects, for Quaternary alluvium.
- Water-immersion (wax) measurements during 2005, for sandstone, fractured sandstone, brecciated sandstone, siltstone and intrusive breccia.
- Water-immersion (wax) measurements during 2006, for the various porphyry types.
- Published theoretical values, for dykes, shale-limestone and diorite.

Based on review of the density values assigned to the various lithological and weathering categories, Coffey Mining considers that the density weighting as applied by Iamgold appears to be reasonable. Coffey Mining is satisfied that sufficient density data has been collected to assign tonnage factors for the resource estimate (See Section 17.1).

14.7 Verification Sampling

Independent verification sampling has not been carried out by Coffey Mining.

14.8 Drillhole Database

Data collected from drilling programs is stored in a digital database.

Hard copies of original paper drill logs, daily drill reports, core photos, assay results, and various ancillary logging features are stored in filing cabinets at Lima.

15 ADJACENT PROPERTIES

The region displays a particularly rich endowment of metals (Cu-Au-Ag) occurring in porphyry and epithermal settings, including the Lagunas Norte mine at Alto Chicama, the Comarsa mine, La Virgen mine, Shahuindo exploration project and Tres Cruces development project.

As reported on the Barrick website, in 2006, its first full year of production, Lagunas Norte produced 1.1 million ounces of gold at total cash costs of $100 per ounce, exceeding expectations. Proven and probable mineral reserves as of December 31, 2006 were estimated at 8.8 million ounces of gold.

A short visit to the nearby La Virgen operating gold dump leach mine was made by Dr de Visser and Mr Kirk in November 2007. La Virgen is a privately owned mine and public information is not available, however information obtained from the visit was relevant and very useful for the assessment of the gold dump leaching portion of the proposed La Arena operation. The mineralisation at La Virgen is similar to La Arena.

16 MINERAL PROCESSING AND METALLURGICAL TESTING

The La Arena Project comprises an oxide portion containing low grade gold mineralisation, and a sulphide fraction containing both primary and secondary copper mineralisation. It is proposed that the gold bearing oxide material will be processed via a dump leach and the copper sulphide ore will be treated via a conventional grinding and flotation circuit.

Extensive metallurgical testwork has been undertaken to assess the mineralogical, comminution and flotation characteristics of the three sulphide mineralisation types. This testwork focused on copper recovery and enabled key process design parameters to be established.

The copper concentrate can be regarded as clean without any major penalty elements.

There is additional testwork to be completed, most importantly further composite and variability testwork to confirm concentrate metal grades and recoveries of copper and gold particularly at ore blends representative of design mill feed. The preliminary testwork indicates that it is possible to recover approximately 50% of the gold rejected to the flotation tail with relatively little reagent and residence time requirements; however this processing option was not included in the PFS. If demonstrated that flotation tail cyanidation is suitable this would produce an overall gold recovery of approximately 60%.

Further investigation into the potential molybdenum recovery and extraction will likely be performed to assess its economic viability. Molybdenum recovery to the final concentrate ranged between 35% and 65% even though the final flowsheet development did not focus on molybdenum recovery.

Ancillary testwork such as settling and filtration is also still to be completed, although these aspects pose a relatively low risk to the project.

The copper sulphide process flow sheet selected and preliminary equipment selection appears suitable and reflects the testwork completed to date.

16.1 Mineralogy

16.1.1 Oxide

The oxide mineralisation consists mainly of sandstone, quartzite and dacite material types, with minor amounts of brecciated sulphide porphyry and siltstone also observed. The gold mineralisation in the sandstone/quartzite samples was found to consist of relatively large, liberated grains with sizes averaging 100µm. Some electrum was seen, both free and associated with gangue and sulphide minerals.

Several other oxide samples containing a large amount of clay material showed completely different gold mineralisation, in that no coarse gold particles were observed. The microscopic examination of the concentrate produced by heavy liquid separation indicated that most of the gold grains were associated with limonite, un-liberated quartz and the lighter gangue fractions. Evaluation of the average gold grain size had to rely on a very limited number of observations and is therefore not considered reliable. All gold particles detected exhibited a size below 1 micron.

The third type of oxide mineralisation was observed in samples taken closer to the adjacent copper sulphide deposit, and contained a larger portion of the brecciated sulphide porphyry material. The heavy media concentrate (sink fraction) produced for this material consisted largely of quartz and pyrite grains in almost equal proportions. Traces of chalcopyrite were also found, as well as chalcocite. Native gold was rarely seen, being present mainly in association with pyrite. Significant amounts of copper and other deleterious elements such as lead, iron and arsenic were also observed, which would be detrimental to cyanide leaching, however this material is expected to represent only a small portion of the total oxide material.

16.1.2 Sulphide

The copper sulphide mineralisation has been categorized into three types, Primary High Grade, Primary Average Grade and Secondary ore for the purposes of metallurgical testing.

Pyrite is the most dominant sulphide mineral present in all cases, while quartz, phyllosilicates and feldspars account for most of the non-sulphide minerals in each of the ore types. Copper is present almost entirely as chalcopyrite in the primary ore types with little to no secondary copper minerals present. The secondary ore type however includes significant amounts of secondary copper mineralisation including bornite, covellite and chalcocite, although chalcopyrite is still the dominant copper-bearing mineral.

Trace quantities of molybdenum as molybdenite were also observed in all three samples. A study of the grain size distribution indicated the copper bearing and molybdenum minerals to be relatively fine grained in comparison to the larger pyrite and non-sulphide gangue materials.

The gold association was determined by heavy liquid separation. Analysis of the float and sink products indicated that the gold is evenly distributed between the pyrite/sulphide (49%) sinks, and quartz/silicate gangue (47%) float fractions. Subsequent super-panning and concentration of the sinks fractions revealed the presence of only a small amount of coarse gold, with liberated particles accounting for 4% of total gold, with the rest being fine grain inclusions in pyrite and quartz gangue material.

16.2 Metallurgical Sampling

A plan of the drillholes used for metallurgical samples is shown in Figure 16.2_1.

At PFS level Coffey Mining believe the samples are representative of the expected mining areas. More testwork is required to be done as part of the next stage of study.

16.2.1 Gold Oxide Samples

- The samples used for heap leach testwork are considerably higher in gold grade than the proposed mine grade for the dump leach operation. Further column testwork should be performed at the 0.45g/t – 0.65g/t range to confirm recovery and reagent usage at dump leach size.
- The heap leach mineralogical investigation indicated up to three different modes of oxide mineralisation, with the brecciated porphyry being highly problematic. The ratio of these ores within the deposit needs to be confirmed, and composite samples representative of the leach feed should be tested to confirm the results.

16.2.2 Copper Sulphide Samples

- Composite testwork results showed poor repeatability in the variability testwork. The variability testwork produced a lower copper concentrate grade of ~21%, although this may be attributed to the higher mass pull observed in these tests.
- The variability testwork also indicated the presence of a near surface deleterious material that may not have been included in the composite testwork. These results suggest that more testwork is required on composite samples that are representative of likely mill feed, to fully assess and confirm the flotation parameters required to achieve the desired concentrate grade.
- The details of the three composite samples from Phase 1 testwork was uncertain and will need to covered by further testwork in any event.

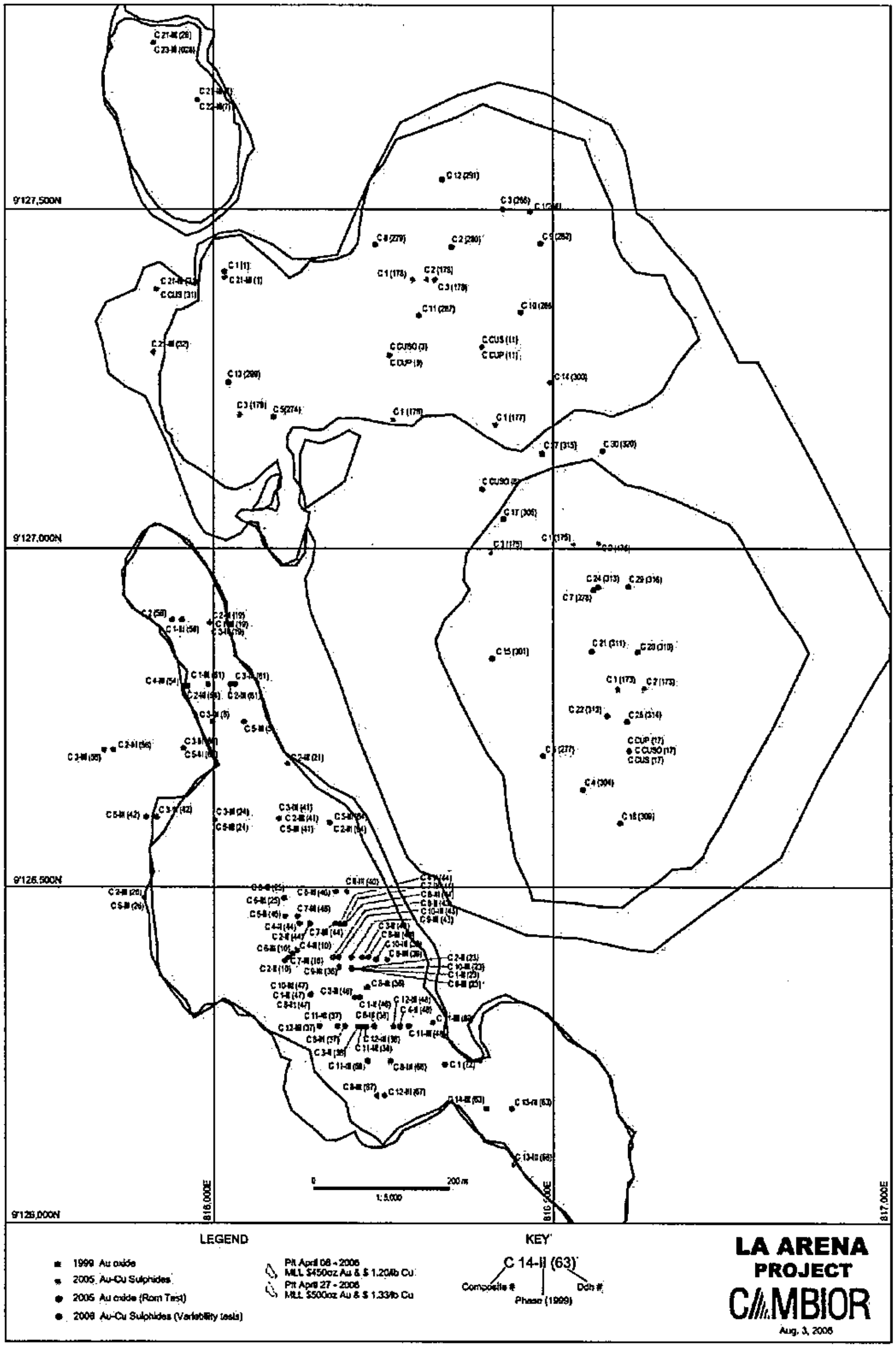
16.3 Testwork Programme

A number of testwork programmes have been undertaken at various testing facilities on samples from the La Arena deposit. These facilities included:

- SGS Santiago, Chile heap leach recovery, column testwork and analysis
- SGS Lima, Peru heap leach recovery, column testwork and analysis
- SGS Lakefield, Canada comminution, flotation, variability testwork

The oxide heap and dump leach testwork was conducted in a number of phases on a range of different samples including diamond drill core and small bulk samples. Initial phases concentrated on bottle roll gold recovery and reagent usage testwork, while later stage testwork was used to assess grain size leaching constraints and the viability of a dump leach.

Figure 16.2_1
Location Plan of Metallurgical Samples



The sulphide testwork focussed on establishing the mineralogical, comminution and metallurgical characteristics of the three distinct mineralisation types. Within the metallurgical testwork, various approaches (including sequential flotation and bulk flotation) were considered and / or tested to determine the optimum process route.

The comminution testwork included a suite of standard tests that were conducted on two samples from the respective polymetallic and cupriferous mineralisation zones within the deposit.

The flotation testwork encompassed numerous scenarios aimed at establishing and confirming the concentrate grades and metal recoveries from the three mineralisation types. This testwork included optimum grind size determination for both copper and gold associations, including concentrate regrinding and multiple cleaning stages.

Preliminary testwork was also conducted on flotation tails to assess the potential for increased gold recovery via cyanidation.

The variability or second phase (Phase 2) testwork was completed on 30 samples, originating from different areas of the mineral deposit with an objective to confirm the flotation flowsheet and to study the effects of the variable copper grade and ore type on recovery.

16.4 Comminution Testwork

Phase 1 of the testwork involved three master composite samples (high grade primary, average grade primary and secondary ore) which involved the testing of Bond ball and rod mill indices. Phase 2 was conducted on a selection of variability samples, and was also used to confirm the previous composite results. The following testwork was completed by SGS Lakefield.

- Bond low-energy Impact Test (CWI)
- Bond Rod Mill Grindability Test (RWI)
- Bond Ball Mill Grindability Test (BWI)
- SAG power index (SPI)
- Bond Abrasion Index Test (AI)

The Phase 1 results are given in Table 16.4_1 below.

Table 16.4_1
La Arena Project
Bond Work Indices

	Porphyry Cu-Au Zone	Ball Mill Work Index	Rod Mill Work Index
Primary Ore, Average Grade	Primary	7.6	7,1
Primary Ore, High Grade	Primary	8,1	7,1
Mixed Ore	Secondary	6,9	N/A

The results indicate that all three ore types are in the low range of ore hardness. The Bond work index was repeated in Phase 2, in part to confirm the above results. A number of the variability samples were combined to form three sub-composites that were tested in a similar manner, with the addition of the abrasion index, as shown in Table 16.4_2. The results confirmed the relatively low Bond work index of the ore. The abrasion index was in the low to very low range.

Table 16.4_2
La Arena Project
Bond Work Index and Abrasion Index

	Abrasion Index (AI)	Work Index (kWh/t)
Composite north 40-150m	0.0369	5.7
Composite south 60-200m	0.0566	7.1
Composite south (deep) 200-450m	0.0926	7.5

Also as part of Phase 2, 10 samples were selected from the 30 variability samples and tested to establish the SAG power index and crusher work index, with the results as shown in Table 16.4_3.

Table 16.4_3
La Arena Project
SPI and CWI Index

Sample	SPI (minutes)	Crusher Index
1	14.9	47.8
2	12.9	40.2
3	18.4	38.9
4	14.1	43.5
5	14.6	31.5
6	7.5	41.3
7	8.2	41.9
8	7.6	48.5
9	10.4	34.6
10	12.4	34.5
Average	**12.1**	**40.27**

A crushing work index of 40.3 would be considered in the low range for competent ores. The SAG Power Index or SPI can be used to give an indicative SAG mill power requirement. In the case of La Arena ore, with the particularly low average Bond Work Index of approximately 7.8kWh/t, it would be recommended to undertake JK SAG milling testwork to assess the ores amenability to SAG milling and that the chosen power requirement is adequate.

16.5 Heap Leach Testwork

The heap leach oxide testwork was conducted in a number of phases. The first and second phases were conducted at SGS Chile (in 1997), and consisted of bottle roll and column leach tests designed to determine the maximum gold recovery, reagent usage and crush size relationships. Phase 3, 4 (1998) and recent dump leach (2006) testwork were completed at SGS Peru.

Initial bottle roll samples were crushed to –12.7mm and leached in a rolled bottle for 72 hours. The resulting extraction rates were relatively high, while cyanide consumption was low to average, from 0.35 to 0.54kg NaCN/t. The lime consumption was also low (0.34 – 0.73kg/t) except for the brecciated intrusive sample (1.33kg CaO/t).

This was followed up with a more comprehensive column testwork, with the results shown in Table 16.5_1.

Table 16.5_1
La Arena Project
Phase 2 Column Testwork

Sample	Calculated Head (Au g/t)	Au Extraction (%)	NaCN Consumed (kg/t)	Lime Consumed (kg/t)
Material Crushed at –19mm (–¾")				
Composite 2	2.,75	92,8	0.33	0.27
Composite 3	1.40	80,0	0.32	0.27
Composite 4	1.37	88,3	0.28	0.51
Composite 5	0.95	79,3	0.31	0.27
Material Crushed at –12.7mm (-½")				
Composite 2	2,60	93,1	0.46	0.34
Composite 3	1,31	81,8	0.49	0.34
Composite 4	1,07	86,0	0.37	0.54
Composite 5	1,14	80,7	0.40	0.27

The following comments can be made, based on the results obtained:

- Cyanide and lime consumptions are low.
- The final recoveries are relatively high for heap leach and there appears to be very little difference in recovery between the two size fractions.
- It was also noted that the columns with ore crushed at – 19mm (-¾") showed good permeability.

It should be noted however that the material used in this Phase 2 was predominately the sandstone material type containing large, liberated gold grains.

Phase 3 of the testwork was essentially a repeat of the bottle roll and column testwork, but focused on the different ore types, such as the sandstone, quartzite and brecciated ores. The bottle rolls indicated that the rock type did not seem to affect the gold recovery at the finer crushed sizes, with recovery of 84.9% for brecciated intrusive, 86.7% for quartzite and 87.3% for sandstone tested -75µm. The equivalent gold recoveries at -2mm were 85.4%, 82.5% and 84.1% respectively.

Ten column leach tests were initiated with material crushed to -6.3mm (-¼") plus two column leach tests at -12.7mm (-½"). The results of each test are summarized in Table 16.5_2.

Table 16.5_2
La Arena Project
Phase 3 Column Testwork

Sample	Calculated Head (g Au/t)	Au Extraction (%)	Ag Extraction (%)	NaCN Consumed (kg/t)	Lime Consumed (kg/t)
Material Crushed at –12.7mm (-½")					
Composite 7	1.46	79.7	54.0	0.47	2.05
Composite 9	1.92	88.4	39.0	0.49	0.47
Material Crushed at –6.3mm (-¼")					
Composite 1	0.61	67.3	57.0	0.97	2.76
Composite 2	1.14	71.5	44.1	1.20	3.90
Composite 3	1.10	88.1	46.9	0.94	2.35
Composite 5	0.96	80.8	51.0	1.36	2.30
Composite 6	1.18	87.9	68.001	1.18	1.50
Composite 8	1.18	59.6	58.1	0.82	4.56
Composite 10	3.36	93.9	45.7	1.16	2.17
Composite 11	0.81	87.0	42.8	1.27	1.48
Composite 12	1.14	82.2	59.3	1.12	1.73
Composite 21	0.63	65.4	56.0	0.93	3.70
Average	**1.29**	**79.3**	**51.8**	**0.99**	**2.54**

The following comments can be made, based on the results obtained:

- The head grade of the test samples were significantly higher than that expected in the dump leach design, hence the recovery achieved may be overstated compared to what might be obtained at a lower head grade similar to that expected from the mine.
- Cyanide and lime consumptions were relatively low, and increased with decreasing grind size.
- There was little difference in gold recovery between the two size fractions, suggesting it may be possible to use a coarse size and still maintain acceptable recovery.
- Several columns encountered percolation problems during testing, which was believed to be the result of a higher proportion of limonite and clays.

The fourth phase of the oxide testwork focused on the ore type with higher proportions of intrusive brecciated sulphide material. The composites selection cutoff was set at 0.3g/t Au and 0.3% Cu.

The resulting extraction rates for the bottle roll tests were low. Cyanide consumption was relatively high and lime consumption low. The brecciated material was problematic with respect to gold recovery, reagent usage and permeability/turbity. The proportion of this material in the deposit and available options in terms of its contribution to a dump leach blend requires further investigation to minimise its detrimental effect.

The final stage of oxide testwork conducted involved the viability of leaching a coarse fraction, so as to simulate dump leaching. Given that the previous results indicated that the recovery did not appear to be sensitive to crush size, it may be possible to achieve acceptable gold recoveries at coarser size fractions.

Several column leach tests at different particle sizes were initiated, using a range of samples covering the sandstone and brecciated ore types. Four identical composite samples were generated at crush sizes of –200mm (8"), -100mm (4"), - 50mm (2 ") and – 20mm (¾ ") and loaded into two, 1.2m diameter columns (for the -20mm and -10mm ore) and two 80cm diameter columns (for the -5mm and -2mm ore). When crushing the material to produce the composite samples, it was noted that the brecciated material produced significantly finer fractions when crushed, with more than 50% reporting to the -0.6mm (¼") size fraction. It was later observed that this size fraction was the source of the permeability problems encountered, and hence indicated that the brecciated ore may prove problematic in high proportions. The results are given in Table 16.5_3.

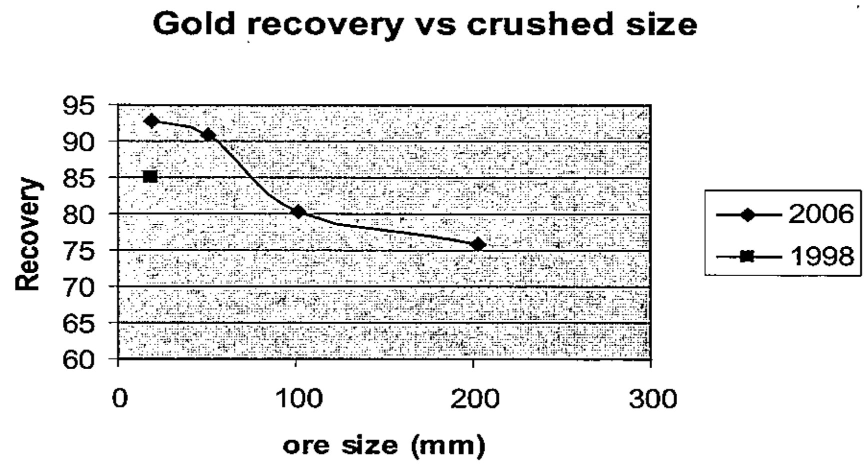
Table 16.5_3
La Arena Project
Coarse Leaching Column Testwork

Sample (mm)	Au Extraction (%)	NaCN Consumed (kg/t)	Lime Consumed (kg/t)
20	92,8	1.13	0.49
50	90.9	1.09	0.50
100	80.2	1.02	0.17
200	75.7	0.98	0.57

As expected, gold extraction was negatively impacted, with the recovery stepping down consistently with increasing size, with a significant decrease above 5mm in size. The PFS design used a dump leach recovery of 80%, which appears unreasonable given the results to date. There is a clear reduction in recovery with increasing size, and further testwork at the proposed dump leach size of -200mm is recommended.

The recovery versus size fraction relationship can be seen in Figure 16.5_1. Based on the test results to date, the use of dump leaching rather than heap leaching (where the ore is crushed), the lower average grade of the dump leach ore and from experience at comparable operations Coffey Mining believes a gold recovery of 65% is reasonable and this has been used in this Report.

Figure 16.5_1
Gold Leach Recovery versus Size



Cyanide and lime consumption remained at acceptable levels, with cyanide dropping slightly as size increases. The PFS assumes a cyanide usage of 0.25kg/t for a dump leach operation, which is considered unrealistic given the majority of the testwork results have provided a consumption of between 0.50kg/t – 1.00kg/t. Given the lower head grade expected at mine grade, and the decreasing trend of cyanide usage with dump leach size material, a cyanide consumption of 0.50kg/t is considered appropriate.

16.6 Copper Sulphide Testwork

A comprehensive testwork programme was initiated as part of the PFS. The programme focused on copper flotation testwork with the aim of establishing the optimum processing route, concentrate grades and metal recoveries. The Primary Average ore type was used as the basis for determining optimal flotation parameters, as it represents approximately 90% of the deposit.

The associated gold recovery to the copper concentrate was also analysed, along with preliminary flotation tail leaching testwork.

The testwork also notes the significant quantity of molybdenum in the La Arena ore, and its subsequent recovery into the copper concentrate, however no further work into its economic extraction was performed as part of this programme. This Report assumes that there is no economic value attributed to the molybdenum.

Phase 2 of the flotation testwork was a repeat of the Phase 1 work conducted on a series of 30 individual variability samples, representing all the major ore types.

16.6.1 Grade Analysis

Phase 1 of the flotation testwork was conducted on three master composite samples. These samples represent the main ore types found in the copper porphyry deposit. The primary ore has been separated into high grade and average grade copper. The secondary or mixed ore is that material which contains a higher degree of secondary copper mineralisation. The details of the three composite samples are as shown in Table 16.6.1_1.

Table 16.6.1_1
La Arena Project
Samples Grade Analysis

Composite	Porphyry Cu-Au zone	Mineralogy	Au g/t	Cu %	Mo ppm	As ppm
Primary Ore, Average Grade	Primary	cp-py-(chc)	0.319	0.50	66	60
Primary Ore, High Grade	Primary	cp-py-(chc)	0.752	0.92	81	39
Mixed Ore	Secondary	chc-py-(cp)	0.562	0.94	94	129

The design mill feed grade has been set at 0.50% copper, which is appropriate given that the Primary ore represents approximately 90% of the material in the deposit.

16.6.2 Grind Size Determination

The mineralogical testwork indicated that the copper sulphide and molybdenite mineralisation tended to have finer size distributions and grain size than that of the pyrite and non-sulfide gangue mineral groups. This may imply that fine grinding of the ore is required for complete liberation of the valuable minerals from the gangue phases.

A series of flotation sighter tests were conducted over a range of grind sizes from 86µm to 186µm. Based on the kinetic curves and results, the optimum grind size selected was 95µm with a bulk rougher flotation at natural pH and a 10 minute flotation time.

16.6.3 Rougher Flotation and Reagent Selection

A series of rougher flotation tests were conducted on the three ore types in order to establish suitable reagents and flotation time required to produce the optimum grade/recovery curve. Initially two main flotation strategies were investigated:

- Bulk flotation of all sulphide minerals where the rougher recovers all sulphide minerals, and the valuable metals are then separated from pyrite and gangue material in the cleaning stage.
- Selective flotation where the valuable metals are selectively recovered to the rougher concentrate.

The sighter float testwork indicated that the bulk flotation strategy to be the most suitable route, however subsequent cleaner testwork revealed high levels of pyrite and arsenopyrite in the final concentrate. It was decided to adopt the selective flotation approach to reduce pyrite activation in the rougher stages and hence reduce the arsenopyrite levels in the concentrate.

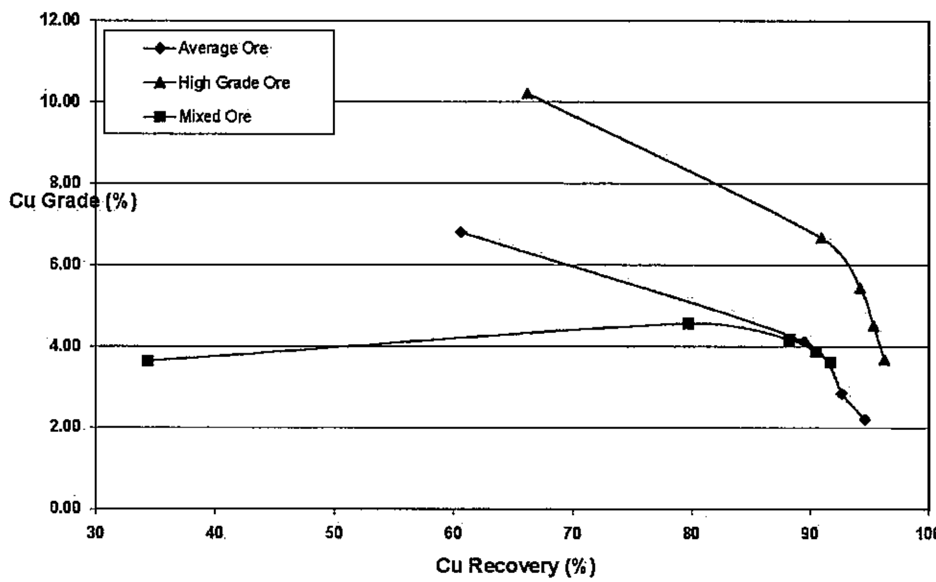
Reagent selection focused on both copper and gold recovery to a rougher concentrate while minimizing reagent usage and cost. A number of different collectors were trialled and a combination of stove oil, pine oil, MIBC and Collector 5100 was finally selected based on the cost effectiveness and metal recovery curves.

In all tests, a significant amount of silicates reported to the rougher concentrate. In an effort to reduce the percentage of floated silicates CMC was trialed, however it failed to depress the silicates and also worsened the filtration characteristics of the rougher tailings.

The flotation response for the primary ore was quite good, with the high grade ore obtaining slightly higher grade concentrate for a given recovery. The copper flotation kinetics of the Mixed ore were much slower and overall recovery fell below the Average Grade and High Grade ore types. The slower kinetics was expected due to the high percentage of secondary copper minerals in the ore.

The flotation response of each ore type is shown in Figure 16.6.3_1.

Figure 16.6.3_1
Rougher Concentrate Grade versus Recovery Curves



16.6.4 Cleaner Flotation and Regrind Testwork

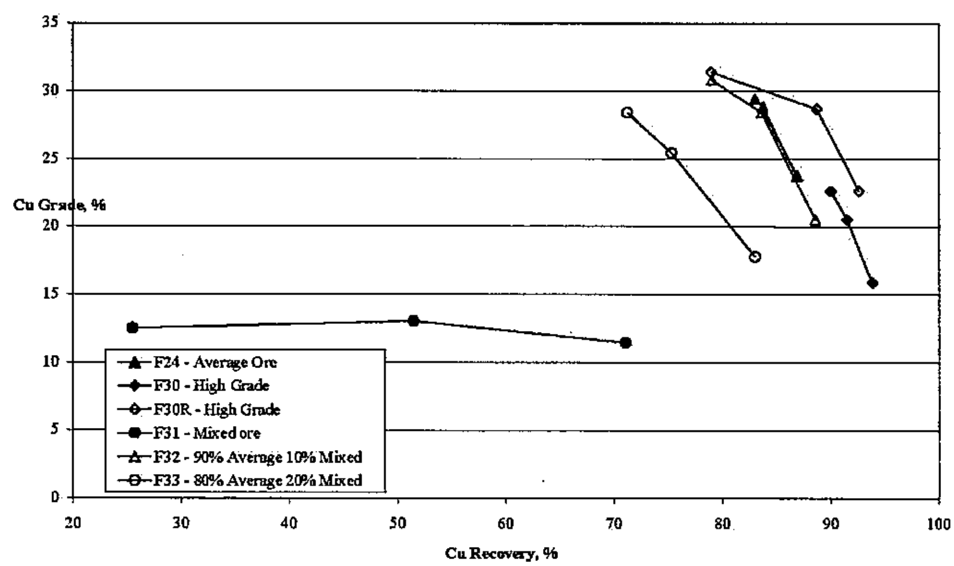
An initial single stage cleaner test was performed on the rougher concentrate and yielded a recovery of 86.2% at a grade of 23.9%Cu. Based on these results, it was concluded that a typical 3-stage cleaning circuit incorporating regrind would produce a saleable copper concentrate with an acceptable overall recovery.

The rougher testwork indicated that the addition of the reagent CMC did not produce the desired silicates depression, and hence a pre-cleaning strategy where the rougher concentrate was floated again for 5 minutes without reagent addition was trialled. The pre-cleaner concentrate was then subjected to regrinding followed by cleaner flotation. This was based on the assumption that the silicates report to the concentrate by means of entrainment rather than flotation. Refloating at a lower pulp density may reduce this entrainment of gangue silicate material. The pre-cleaner trial rejected 4.6% of the mass with moderate copper loss of 2.1%. The sulphur grade of the pre-cleaner tails was 2.68%, thus indicating that the majority of the tailings were silicates. Based on these results, a decision was made to incorporate pre-cleaning into the flowsheet.

The pre-cleaner concentrate will report to a regrind mill prior to the cleaning stage, and a series of tests were performed in order to determine the optimum regrind time and liberation size. After trialing 10min, 15min, 20min and 25min a regrind time of 20min produced the optimal grade/recovery curve, with a liberation size of P_{80}=35μm.

After establishing the optimum pre-cleaner and regrind conditions, the three ore types were then subjected to a typical three stage cleaning process. The primary high grade and average grade material responded well, with typical concentrate grades consistently between 25% - 30% copper at >80% recovery. As with the rougher testwork, the flotation performance of the Mixed or Secondary was below target, with a concentrate grade of only 12.5% after three stages of cleaning. Several tests were conducted using a blend of primary and secondary ores to asses the impact on flotation performance. The results can be seen in Figure 16.6.4_1.

Figure 16.6.4_1
Cleaner Flotation Results



A mix of 90% primary and 10% secondary produced near identical results to the primary average ore, while a higher proportion 80:20 mix clearly had a negative impact on recovery. Based on this result the blend of mixed ore will be limited to 15% or less of plant feed to achieve the desired grade and recovery. This would appear appropriate given the mixed or secondary ore currently represents approximately 10% of the total ore resource.

16.6.5 Locked Cycle Flotation Testwork

In order to simulate a continuous process with circulating loads in a batch environment locked cycle testwork was performed using the optimum conditions from the previous testwork. The locked cycle testing was used to more accurately simulate actual plant performance and provide realistic results as opposed to batch testing which can tend to produce conservative recoveries.

Two complete locked cycle tests (LCT) were performed on primary average ore, and the results are in Table 16.6.5_1.

Table 16.6.5_1
La Arena Project
Locked Cycle Flotation Test Results

LCT #1									
Stream		Assays				Distribution			
	Mass %	Cu	Au	Mo	S	Cu	Au	Mo	S
Feed	100	0.50	0.29	0.0073	7.25	100	100	100	100
Concentrate	1.56	28.03	7.13	0.29	34.13	86.19	37.55	61.25	7.29
Tails	98.44	0.07	0.19	0.00	6.83	13.81	62.45	38.75	92.71
LCT #2									
Stream		Assays				Distribution			
	Mass %	Cu	Au	Mo	S	Cu	Au	Mo	S
Feed	100	0.50	0.33	0.0066	7.11	100	100	100	100
Concentrate	1.50	30.21	9.06	0.18	33.30	89.18	40.91	40.97	7.01
Tails	98.50	0.06	0.20	0.004	6.71	10.82	59.09	59.03	92.99

The results indicate that a concentrate of 28% copper at 88% recovery is readily achievable from the primary average grade ore. Further testwork would be recommended to confirm the results with a blended feed of primary and secondary ore that is more representative of expected mill feed.

Gold recovery to concentrate was between 37.6% and 40.9% which is inline with mineralogical information that indicated that only ~50% of the gold was associated with the sulphide material. Final concentrate analysis was performed and the results are shown in Table 16.6.5_2.

The concentrate can be regarded as a clean concentrate without any major penalty elements.

Molybdenum recovery to the final concentrate ranged between 35% and 60%, although the flowsheet development did not focus on improving molybdenum recovery.

Table 16.6.5_2
La Arena Au-Cu Project
Final Concentrate Analysis

Major Elements Assays (%)							
Element	**Cu**	**Au**	**S**	**Fe**	**Mo**	**Zn**
Assay (%)	28.00	7.13	33.75	32.00	0.29	0.52

Minor Elements Assays (ppm)								
Ag	**Al**	**As**	**Ba**	**Be**	**Bi**	**Ca**	**Cd**	**Co**
33	4 350	550	90.5	< 0.08	< 20	760	< 15	44.5
Cr	**Hg**	**K**	**Li**	**Mg**	**Mn**	**Y**	**Na**	**Ni**
< 6	2.9	1400	< 5	265	18.5	1.9	180	< 20
P	**Pb**	**Sb**	**Se**	**Sn**	**Te**	**Ti**	**Tl**	**V**
44.5	325	200	< 50	< 30	< 100	640	< 30	9

16.6.6 Variability Testwork

Phase 2 of the testwork involved variability testing of 30 samples taken from across the ore body. The samples include both the primary and secondary ore types. Each sample was tested individually using the optimised flotation process from Phase 1. Several composite samples that were more representative of a blended mill feed were also tested. The average of all 30 results and the composite samples are in Table 16.6.6_1, along with the Phase 1 result for comparison.

Table 16.6.6_1
La Arena Au-Cu Project
Variability Testwork Summary

	Cu Grade %	Cu Recovery %	Au Recovery %
Individual Average	21.70	84.20	40.70
Composite Average	20.90	84.76	41.30
Phase 1	29.40	83.00	31.80

The variability results are comparable with phase one testwork with respect to concentrate recovery, however the copper grade is significantly lower. The results for the secondary ore samples was poor, although inline with the Phase 1 results. The gold grade was higher than expected, but this may have been due to the higher mass pull that also contributed to the lower copper grade.

These results suggest that more testwork is required on composite samples that are representative of likely mill feed, to fully assess and confirm the flotation parameters required to achieve the desired concentrate grade.

16.6.7 Flotation Tail Cyanidation

Mineralogical and gold deportment testwork confirm that approximately 50% of the gold is associated with the gangue material, and hence is discarded in the flotation tail. Of the total gold in the feed, 40% is recovered to final concentrate, 30% is rejected in the rougher tail and the remaining 30% discarded in the various cleaning stages, most notably the pre-clean and first cleaning stage tail.

Preliminary leach tests were performed on the different flotation tail streams to evaluate the gold recovery by conventional cyanidation. Several streams were tested individually as well as a combined tail stream. Initial tests indicated that approximately 50% gold recovery could be recovered from the first cleaner tail, although the reagent consumptions were quite high at 3.6kg/t for cyanide and 1.81kg/t for lime. The combined tail test produced a similar recovery, although reagent usage was significantly lower with 1.79kg/t for cyanide and 0.52kg/t for lime. Both leach tests were conducted over 24 hours.

A more comprehensive kinetic test was conducted on the tails obtained from the locked cycle testwork, in order to asses the rate of gold dissolution. The results were similar to those obtained above, with approximately 50% of the gold recovered after 8 hours of leaching. The fast dissolution rate also appeared to be beneficial in terms of reagent usage, with significantly lower consumption compared to the 24 hour tests.

Table 16.6.7_1
La Arena Project
Flotation Tail Cyanidation

Sample ID	Leach Time (hours)	Head Grade (g/t)	Gold Recovery (%)	NaCN (kg/t)	Lime (kg/t)
First cleaner tail	2	0.66	50.1	1.02	1.04
	8	0.66	52.6	1.18	1.29
	24	0.66	48.9	2.20	2.09
Combined tails	8	0.20	52.0	0.40	0.42
	16	0.20	61.7	0.50	
	24	0.20	57.5	1.56	0.45

The preliminary testwork indicates that it is possible to recover approximately 50% of the gold rejected to the flotation tail with relatively low reagent and residence time requirements; however this processing option was not included in the PFS. If demonstrated that floatation tail cyanidation is suitable this would produce an overall gold recovery of approximately 60%. It is recommended that this option be investigated further to assess its economic viability.

16.7 Processing Flowsheets

16.7.1 Dump Leach

The dump leach facility was designed to by Vector Engineering of Lima, Peru as part of the PFS. The leach pad is planned to be constructed in two (2) phases to reduce initial capital costs. Phase 1 is designed to process the first 9Mt of ore while Phase 2 is designed to contain the balance of the dump leach reserves. The pad in the PFS was designed to contain 29.5Mt of ore. Since the current dump leach reserves exceeds the PFS design Coffey Mining determined that there is sufficient area available to expand the pad. Area of the total life of mine pad footprint will be approximately 600,000m^2 with a maximum height of approximately 85m. The design includes a pregnant (PLS) and intermediate (ILS) solution pond plus a solution overflow pond. Rainfall diversion facilities are also incorporated into the design.

Phase 1 pad construction will consist of a plastic lined area approximately 440m by 440m (+/-192,000m^2), reaching a height of 82m.

Mine haul trucks will directly dump ore onto the leach pad. The pad design was to create multiple modules measuring 150m long by 50m wide and 6m deep containing approximately 75 000t of ore.

Phase 2 pad construction will expand the pad foot print in all directions except toward the pregnant leach solution (PLS) pond. The PFS total lined area has a footprint of approximately 1 100m by approximately 600m. However, Phase 1 design provides an overall negative water balance. As Phase 2 construction proceeds, the surface area of the pad increases and the system water balance becomes positive. This will require discharge and treatment of leach solution for up to 7 months of the year. Options for reducing or eliminating the positive water balance are to install a plastic covering (raincoat) over sections of the pad or increase the size of the overflow pond. The latter is preferable but requires more capital. The Final Feasibility will need to address this problem and will likely recommend increasing the size of the overflow pond to 100,000 cubic meters. This cost is not shown in the start up capital.

The pregnant liquor would be pumped from the PLS pond and circulated through five (5) columns in series containing activated carbon. A contact time of 20 minutes has been assumed to be sufficient to achieve a gold extraction of 98%. Gold loading on carbon is expected to reach approximately 3,000ppm at which point it would be sent to the elution plant. The loaded carbon would be acid washed and stripped at 150°C and 450kPa in a caustic cyanide solution to elute the gold. The barren carbon would then be heated in a 125kg/h kiln at 700°C for 60 minutes to destroy deleterious organics and inorganics and in turn reactivate the carbon. The reactivated carbon would then be pumped back to the off-line carbon column after being screened so as to remove carbon fines. This circuit would need to be operated for approximately 50 hours per week, on the basis of the carbon balance and expected gold loading.

The eluate solution would then be circulated through two 3.5m^3 electrowinning cells where the gold would be plated on stainless steel mesh cathodes. Electrowon gold would be then acid-washed after removal from the cathodes, filtered and smelted in an electric tilting furnace, with an appropriate flux mixture, to produce gold doré bullion bars.

A flowsheet of the dump leaching operation is shown in Figure 16.7.1_1.

16.7.2 Copper Sulphide Plant

The PFS concluded the ore would be trucked to the crusher plant where it would be crushed to 80% minus 200mm using a gyratory crusher, belt-fed and discharged to a stockpile. The mill would be fed by a set of apron feeders located in a concrete reclaim tunnel below the stockpile, discharging onto a conveyor feeding the grinding circuit.

The ore will be ground using a 9.1m (30') diameter x 3.7m (12') long SAG mill with a 4850kW (6 500hp) motor in open circuit and an 5.5m (18') diameter x 9.8m (32') long ball mill with a 4850kW motor in closed circuit. The pulp would be discharged to the SAG mill discharge screen where the oversize would be collected and re-circulated to the SAG mill feed. The screen discharge would be pumped to the classification unit. Classification is done using a set of hydrocylones in closed circuit with the ball mill. The primary grind size target is 80% minus 95µm feeding the flotation circuit at 35% percent solid by weight. The rougher flotation circuit would have 8 flotation tanks in series with a residence time of 20 minutes. The flotation tail is currently planned to be discharged directly to the tailings pond.

The reagents will be added to the flotation circuit at specific points to float the copper and gold. The copper rougher concentrate will be sent to a pre-cleaner stage to remove slime before regrinding and cleaning. The pre-cleaner will have 10 tank cells in series with a 10 minute total residence time. This step is critical to ensure that the copper concentrate grade target can be reached. The pre-cleaner tail is sent with the rougher tail to the tailings pond.

The pre-cleaner concentrate would go to a 4.3m (14') diameter x 5.5m (18') long 1500kW regrind mill where it will be ground to a product size of 80% minus 35µm to increase the copper mineral liberation prior to cleaning stages. The concentrate will be cleaned in a three cleaner stages. The first cleaner will have 10 tank cells in series with a 10 minutes residence time. This first cleaner stage is in open circuit and the tail would be sent with the rougher tail to the final tailings pond. The concentrate from the first six cells would be sent to the second cleaner as the first cleaner concentrate, the concentrate from the last four tank cells would be re- circulated to the first cleaner feed as a first cleaner scavenger concentrate. The cleaner two and three would be in a closed circuit mode. The cleaner two would have 8 x 5m^3 cells in series with a residence time of 5 minutes. The third cleaner would have 6 x 3 m^3 cells and also with a residence time of 5 minutes. The final concentrate would be sent to a 15.2m (50') diameter x 3.7m (12') high thickener where the pulp density will be increased to 55% solids prior to be stored in two parallel slurry storage tanks.

The final concentrate will be filtered and conveyed and discharged in a storage shed. The dry concentrate would be loaded with a front end loader and trucked to the coast where it would be stored in a shed prior to being be shipped overseas to a smelter.

A flowsheet of the flotation and milling plant is shown in Figure 16.7.2_1.

Figure 16.7.1_1
Dump Leach Flowsheet

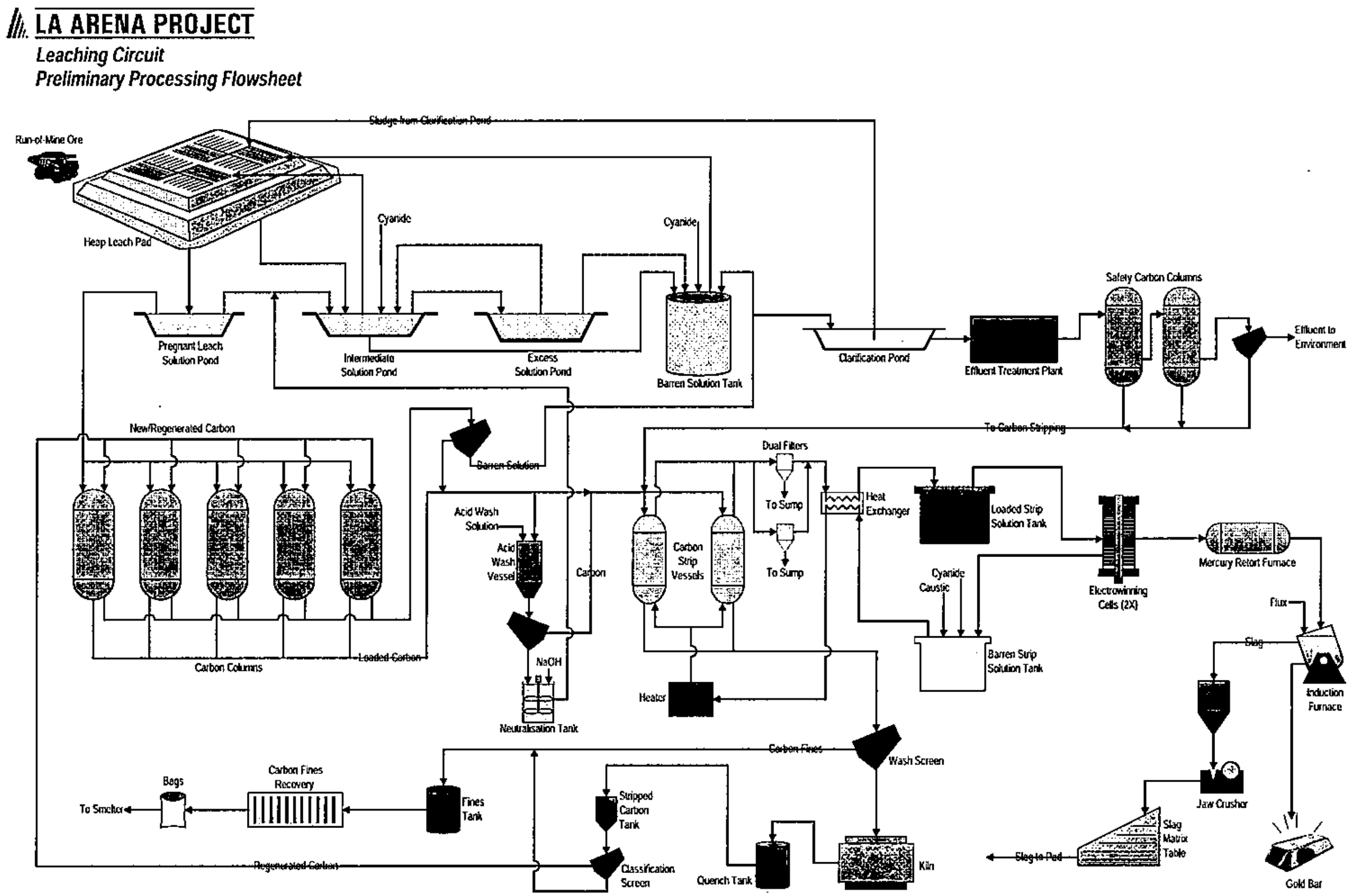
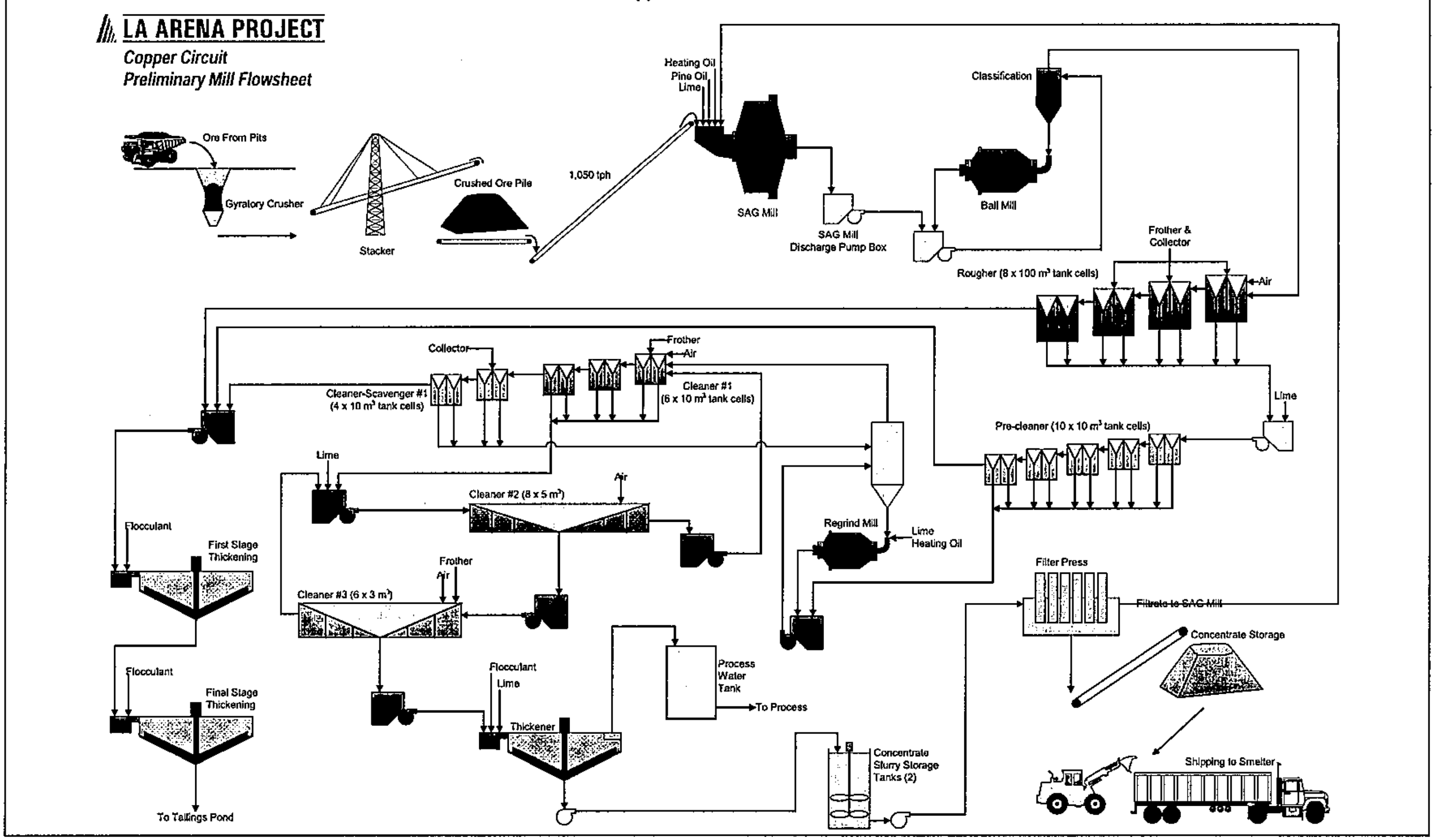


Figure 16.7.2_1
Copper Circuit Flowsheet



17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 Mineral Resource Estimates

17.1.1 Introduction

The Mineral Resource for the La Arena deposit was estimated by Iamgold in November 2006 for the prefeasibility study and updated in February 2007 for the oxide heap leach scoping study. Iamgold estimated the gold, copper, molybdenum and silver resources using Ordinary Kriging.

Coffey Mining reviewed the Iamgold prefeasibility and scoping study reports and digital data such as databases, wireframes, composite data and block models. Domain interpretation, grade estimation and resource classification were investigated in detail.

Coffey Mining does not support the Measured classification of the 2007 (and 2006) resource completed by Iamgold because of the limitations on accuracy posed by the drillhole spacing of 50 to 65m. Following detailed review and validation, Coffey Mining adopted the latest grade estimate by Iamgold but reclassified the Measured category to Indicated.

17.1.2 Database Development

Coffey Mining has been provided with the digital databases, topography, geological and mineralisation wireframes, oxidation surfaces, flagged 5m composite data, a block model download, and cross-sections, and based its review and validation on these sources.

Coffey Mining inspected five holes against geological logging and Au and Cu assays. A reasonable correlation was seen between lithology, logging and assays. No major data issues were identified.. The data were found to be internally consistent with appropriate coding of data types and mineralisation domains.

17.1.3 Geological Modelling

Mineralisation constraints are based on geological features in diamond core and trench mapping. Based on lithological and oxidation characteristics, the interpretation attempts to separate domains as listed in Table 17.1.3_1.

The geological interpretation utilises both 25m spaced E-W cross sections and 6m or 24m spaced level plans. A combined lithology-oxidation code number was assigned by adding the code numbers (for example 150 for brecciated sandstone in the Cu poor oxide zone).

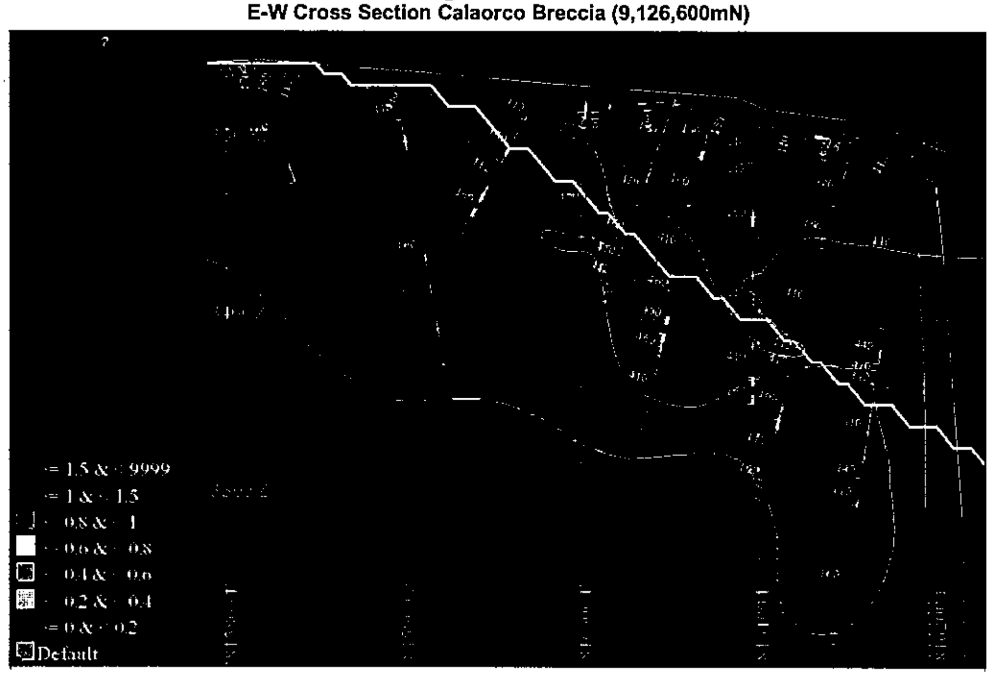
Coffey Mining reviewed the lithology and oxidation wireframes and surfaces in 3D, using Surpac software, and concludes that the interpretation is reasonable, whilst noting the limitations on accuracy posed by the rather wide drillhole spacing of 50 to 65m. Infill drilling, to for instance 25 to 30m spacing, is likely to result in local revisions of the interpreted zones and move indicated resource into measured resource.

Table 17.1.3_1
La Arena Au-Cu Project
Lithology and Oxidation Zones

Lithology			Oxidation		
Description	**Code**	**Number**	**Description**	**Code**	**Number**
Quaternary	QL	7	Cu poor oxides (< 300ppm Cu)	OXI	100
Andesitic dyke	IHA	2	Cu rich oxides	OXR	200
Post-mineral dyke	IHFL	3	Secondary (supergene)	SP	300
Intrusive breccia	IHFEB	40	Primary (hypogene)	HY	400
Siltstone	SS	12			
Early mineral porphyry	IHFQM	30			
Late mineral porphyry	IHFQI	20			
Pre-mineral porphyry	IHFE	10			
Shale-limestone	SHSLS	11			
Diorite	IHO	6			
Sandstone	SD_CLIP	70			
Brecciated sandstone	SDB	50			
Fractured sandstone	SDCR	60			

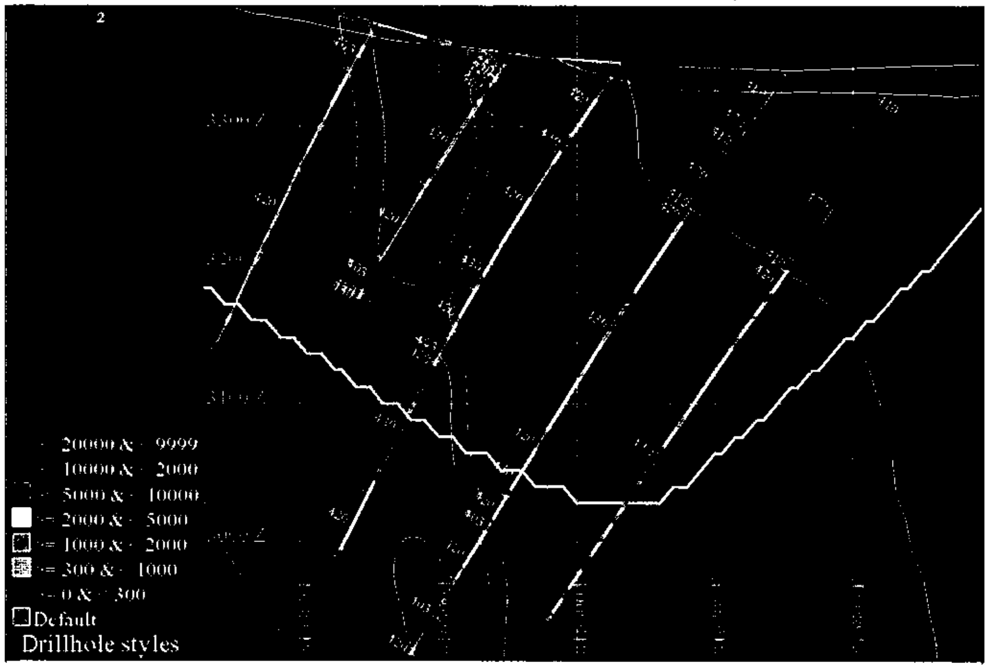
Typical E-W cross sections are shown for Calaorco Breccia (Figure 17.1.3_1) and South Porphyry (Figure 17.1.3_2), showing Au and Cu drillhole grades, respectively. The brecciated and fractured sandstone units are hosts to most of the gold mineralisation, followed closely by the intrusive breccia. In terms of copper mineralization, the non-oxidized early mineral porphyry is the major host with the late mineral porphyry playing a minor role.

Figure 17.1.3_1
E-W Cross Section Calaorco Breccia (9,126,600mN)



Drillhole traces coloured by Au grade (g/t)

Figure 17.1.3_2
E-W Cross Section South Porphyry (9,126,800mN)



Drillhole traces coloured by Cu grade (ppm)

17.1.4 Grade Estimation

Au and Cu high-grade cuts were applied on the samples on the basis of log probability plots. Generally no cut was applied or only one or two samples were cut in most cases, resulting in modest reductions in mean grades. Coffey Mining reviewed the application of high-grade cuts and found the approach followed by Iamgold to be reasonable. No cuts were applied for Mo.

Iamgold composited the drillhole data, i.e. the cut sample grades, to regular downhole lengths of 5m and assigned a code number according to the prevalent lithology and oxidation. Samples lengths vary from 0.35m to 8m and average 2m.

Relative nuggets modelled by Iamgold for combined zones are moderate, i.e. 20 to 25% for Au and 20 to 30% for Cu in the Sandstones, North Porphyry and South Porphyry. Directional variogram ranges for the combined zones are of the order of 50m to 175m. Coffey Mining considers that the variogram models adopted by Iamgold are reasonable for the styles of mineralisation occurring at La Arena.

The block model has a parent cell size of 10m in northing, 5m in easting and 6m in elevation. The resolution for volume modelling is the same as the parent cell size. Lithology and oxidation codes were assigned to the blocks based on prevalence. Coffey Mining considers that this approach is adequate given the current data spacing; however, sub-celling for volume modelling should be considered for future models incorporating closer spaced data from infill drilling, pre-production drilling and grade control drilling.

As the nominal drillhole spacing is 50m to 65m, Coffey Mining's opinion is that a panel size of 10m N-S by 5m E-W is small for reporting above a cutoff from an estimate by Ordinary Kriging (OK). Coffey Mining considers that a panel size of 20m by 10m would have been more appropriate for the purpose of mining selectivity. The implication of the small panel size relative to the drill spacing is that the model is likely to indicate a higher degree of selectivity than is actually achievable when mining.

Au, Cu, Ag and Mo grades were estimated by OK in two estimation passes with a two-fold increase in maximum search distances. Basically the two searches are intended to differentiate between higher confidence blocks (100 x 100 x 50m search) and lower confidence blocks (200 x 200 x 100m search). A minimum of 3 composites was used for the first pass and a minimum of 2 composites for the second pass. A maximum of 12 composites and maximum per hole of 2 composites was used for both passes.

Trench results were not used for grade estimation but were considered for resource classification. The estimation used a combination of hard and soft boundaries, which appears to be appropriate.

Neighbourhood testing to select the interpolation parameters is not documented by Iamgold. The aim of kriging neighbourhood tests is to quantify the effect of the search on the estimation and thereby avoid errors or bias. Four main criteria (estimation variance, regression slope, weight of the mean and kriging weights) can be used to optimise the search neighbourhood. Coffey Mining has not performed neighbourhood testing, but considers that the search parameters used by Iamgold are reasonable given the nugget effect and spatial continuity as modelled by the variograms.

In conclusion, the modelling approach and the search parameters used to interpolate the various domains are reasonable.

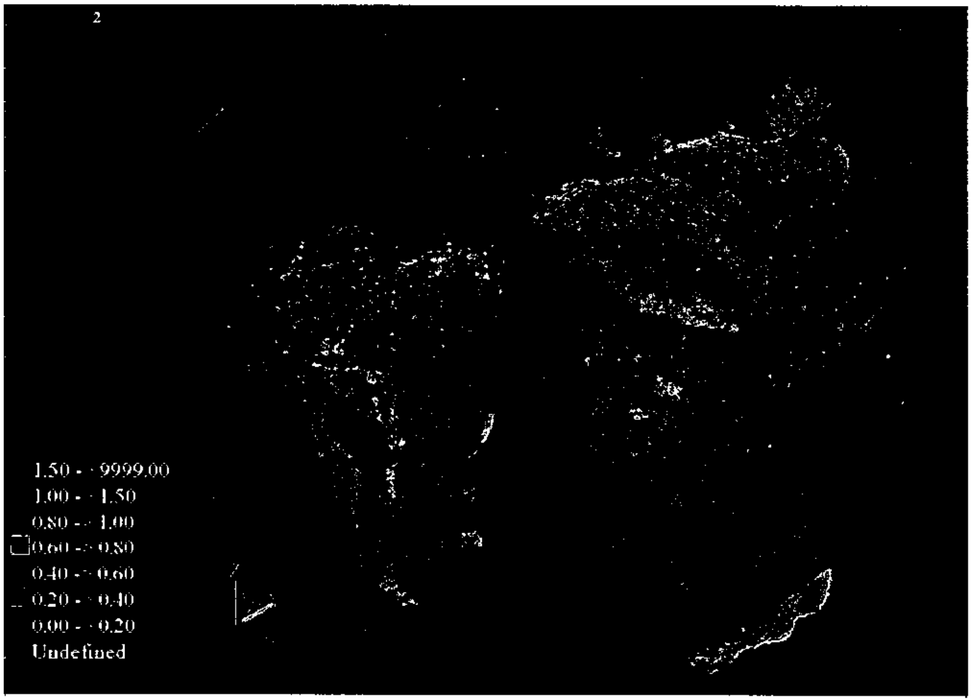
Three-dimensional representations of the block model Au and Cu grades are presented in Figure 17.1.4_1.

17.1.5 Resource Classification

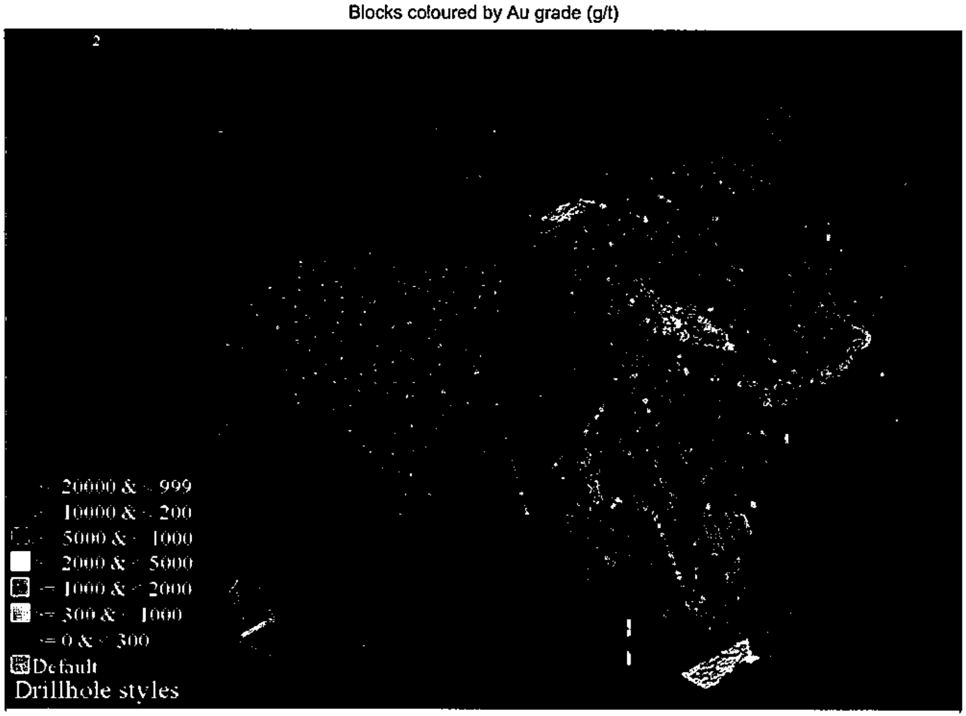
Iamgold classified the resource as Measured, Indicated and Inferred on the basis of kriging variance and interpolation pass. The majority (77%) was classified as Indicated (Figure 17.1.5_1). The remaining portions were classified as Measured (16%) and Inferred (7%).

Coffey Mining agrees with the Indicated classification of the majority of the deposit and the Inferred classification for the deeper and peripheral areas, but disagrees with the Measured classification of small areas in the immediate vicinity of drillholes is optimistic. Cylinders of Measured blocks around individual drillholes do not constitute well established confidence in geological and grade continuity. Coffey Mining reclassified these areas to the Indicated category.

Figure 17.1.4_1
Block Model Au (top) and Cu (bottom) Grades in 3D (looking NW)

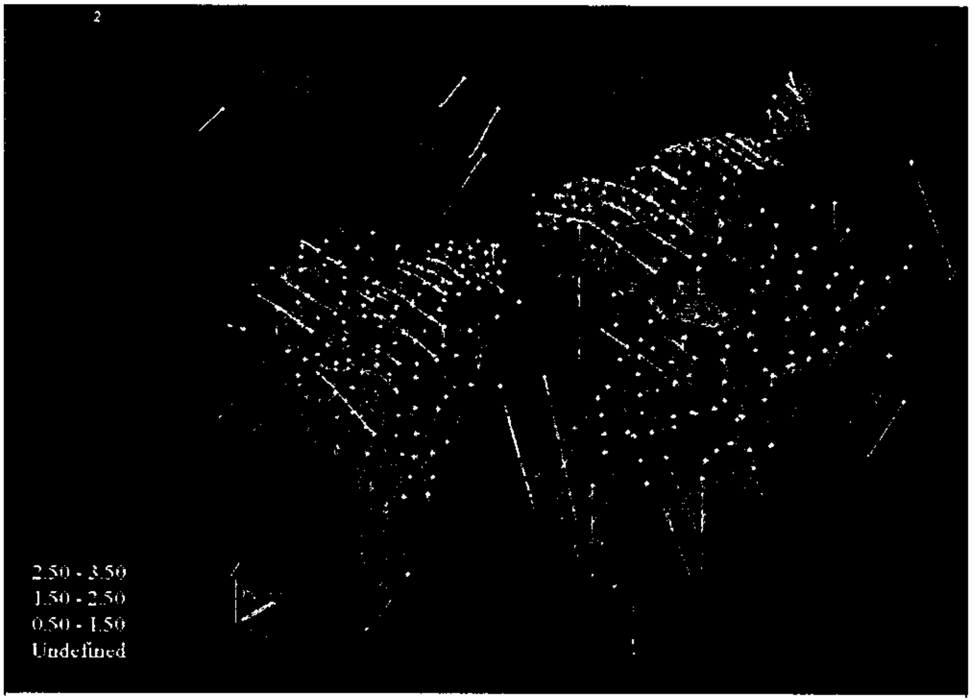


Blocks coloured by Au grade (g/t)



Block coloured by Cu grade (ppm)

Figure 17.1.5_1
Classification by Iamgold
Measured in blue, Indicated in green and Inferred in red



Note: Coffey Mining reclassified the Measured category to Indicated

The drillhole spacing is largely 50m to 65m and uncertainty remains about the local geological and grade continuity. Infill drilling is required before progressing to definitive feasibility studies and mining. The deeper and peripheral areas are sparsely drilled and require infill drilling if they have potential to be converted to Reserves.

17.1.6 Tonnage Factor

As discussed in Section 14.6, bulk density information was obtained from various sources: nearby projects (in the case of quaternary alluvium), 2005 and 2006 in-house surveys using the water-immersion method with wax and theoretical values taken from various publications.

The estimated density for each mineralized unit and are presented in Table 17.1.6_1.

17.1.7 Mineral Resource

The Mineral Resource for the La Arena is given in Table 17.1.7_1. Resources are confined within an optimum undiscounted cashflow pit shell based on US$900/oz Au and US$16/oz Ag for copper-poor mineralisation largely in oxide sandstone (Cu < 300ppm) and a shell based on US$2.50/lb Cu and US$900/oz Au for copper-rich mineralisation largely in primary and secondary porphyry.

Table 17.1.6_1
La Arena Au-Cu Project
Bulk Density

Rock Code	Geological Unit	Description	OXI (Cu-poor ox) Code	OXI (Cu-poor ox) S.G.	OXR (Cu-rich ox) Code	OXR (Cu-rich ox) S.G.	SP (supergene) Code	SP (supergene) S.G.	HY (hypogene) Code	HY (hypogene) S.G.	Reference
7	QL	Quaternary	7	1.80	7	1.80	7	1.80	7	1.80	Nearby project
2	IHA	Andesitic dike	102	2.70	202	2.70	302	2.70	402	2.70	Theoretical
3	IHFL	Post-mineral dike	103	2.23	203	2.23	303	2.30	403	2.30	Theoretical
40	IHFEB	Intrusive breccia	140	2.32	240	2.32	340	2.49	440	2.49	2005 survey
12	SS	Siltstone	112	2.39	212	2.39	312	2.50	412	2.50	2005 survey
50	SDB	Brecciated sandstone	150	2.46	250	2.46	350	2.59	450	2.59	2005 survey
60	SDCR	Fractured sandstone	160	2.52	260	2.52	360	2.58	460	2.58	2005 survey
30	IHFQM	Early mineral porphyry	130	2.24	230	2.24	330	2.61	430	2.61	2006 survey
20	IHFQI	Late mineral porphyry	120	2.24	220	2.24	320	2.50	420	2.50	2006 survey
10	IHFE	Pre-mineral porphyry	110	2.23	210	2.23	310	2.30	410	2.30	2006 survey
11	SHSLS	Shale-limestone	111	2.50	211	2.50	311	2.50	411	2.50	Theoretical
6	IHO	Diorite	106	3.00	206	3.00	306	3.00	406	3.00	Theoretical
70	SD	Sandstone	170	2.56	270	2.56	370	2.61	470	2.61	2005 survey

Table 17.1.7_1
La Arena Au-Cu Project
Mineral Resource (March 31st 2008)

Material	Cuttoff	Category	Tonnes (Mt)	Au Grade (g/t)	Cu Grade (%)	Ag Grade (g/t)	Au ('000 oz)	Cu ('000 t)	Ag ('000 oz)
Oxide	0.15g/t Au	Indicated	58	0.49	0.01	0.09	910		170
		Inferred	1.7	0.28	0.01	0.35	15		20
Secondary & Primary	0.1% Cu	Indicated	220	0.27	0.36		1900	790	
		Inferred	170	0.22	0.32		1200	540	

The average molybdenum grade is of the order of 40ppm. Although not included in the resources, recovery of Mo presents an economic opportunity of interest.

The estimation and classification of the resources by Coffey Mining are in accordance with the guidelines set out in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2004 as 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).

The resource classification is also consistent with and in accordance with criteria laid out in the Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects of December 2005 (the Instrument) and the classifications adopted by CIM Council in November 2004.

The reporting of resource classification under the JORC Code and the Canadian NI 43-101 systems are essentially identical, the notable difference being the requirement to report Inferred Mineral Resources separate from the totalled Measured and Indicated Mineral Resources under NI 43-101.

Jan Pieter de Visser, who is a member of the Australasian Institute of Mining and Metallurgy and has more than 15 years experience in the estimation of resources in gold-copper deposits, assumes responsibility for the resource estimate for the La Arena deposit. Jan Pieter de Visser is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code and CIM Standards respectively. Jan Pieter de Visser is a Director and part time employee of Resource Perspectives Pty Ltd and completed this report on behalf of Coffey Mining of which he was an employee until 31 December 2007.

17.1.8 Comparative Estimates

No comparative estimates have been made available by Iamgold, nor have any been completed by Coffey Mining.

17.2 Mineral Reserve

17.2.1 Iamgold Mineral Reserve

For the PFS pit optimisation, mine design and mine production scheduling was based on a processing requirement of 36,000 tonnes per day (tpd) of ore: 12,000tpd of gold oxide ore to be processed by heap leach along with 24,000tpd of gold-copper ore to be floated into a concentrate that will eventually be smelted.

Pit design, scheduling and fleet sizing was done by Independent Mining Consultants (IMC) of Tucson, Arizona based on preliminary geomechanical characterization computed by DCR Ingenieros S.R. Ltda of Lima, Peru and on criteria developed by Cambior personnel on pits of similar sizes at other Cambior operations.

Engineering and cost estimates were done by Cambior personnel based on owner mining (no contract mining) and their experience and knowledge of comparable operations and on the mining activities in Peru.

The pit optimization was done by IMC with their proprietary floating cone software based on the Lerchs- Grossmann algorithm. Only measured and indicated resources were used to credit cone economics (all inferred resource was treated as waste).

A net value cutoff based on a positive NSR value (after discounting for processing and general & administrative (G&A) costs) was used to categorize the mill ore. Additionally, all mill feed with a copper equivalent cutoff below 0.30% was classified as waste. Economic cutoff for heap leach ore is based on a marginal cost (i.e. processing and G & A) of $2.82/t and a metallurgical recovery of 80%.

All heap leach feed with copper grade greater than 0.03% Cu was considered unsuitable to leaching because of its potentially preg-robbing characteristics.

The optimization was done using the economic parameters as presented in Table 17.2.1_1.

Table 17.2.1_1
La Arena Project
Iamgold Pit Optimisation Economic Parameters

Parameter		**Dump Leach**	**Mill**
Market Price		$550 per ounce Au / $1.50 per lb Cu	
Mining cost ($/t mined)	Sediment	$1.30	$1.30
	Porphyry	$1.16	$1.16
Processing Cost ($/t Ore)		$1.78	$2.97
G & A Cost		$0.84	$1.03
Mill Recovery	Au	80%	40%
	Cu	0%	87%
Slope Angles		35° - 50°	
Royalty		0%	
Internal Cutoff Grades		0.19g Au/t	0.30% Cu equivalent

Note that the mining cost was increased by 1% for every bench mined below elevation 3300mRL.

The Mineral Reserve from the PFS is as per Table 17.2.1_2. This reserve was not made public or signed off by a "qualified person" as at that time La Arena was not seen as a material project to Cambior.

The PFS shows reserves by all pit sectors.

17.2.2 Rio Alto Mineral Reserve

All key inputs have been reviewed by Coffey Mining and a pit optimisation using these updated parameters undertaken using Whittle software by Coffey Mining. The explanations on the parameters and the changes made are discussed in other sections of this report and the key input parameters used are shown in Table 17.2.2_1.

The mineral reserves have been estimated using the following cut-off grades:

- For oxide ore with Cu<300ppm (dump leach feed) 0.2Aug/t
- For oxides with Cu>300ppm, secondary and primary sediments and porphyry (mill feed) 0.1%Cu.

The Mineral Reserve, based on the Indicated Resource only, is summarised in Table 17.2.2_2. All Inferred Resource was treated as waste.

The estimation and classification of the mineral reserves by Coffey Mining are in accordance with the guidelines set out in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2004 as 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).

Table 17.2.2_1
La Arena Project
Coffey Mining Pit Optimisation Economic Parameters

Parameter		**Dump Leach**	**Mill**
Market Price		$750 per ounce Au / $1.95 per lb Cu	
Mining cost ($/t mined)	Sediment	$1.49 ore, $1.12 waste	$1.49 ore, $1.12 waste
	Porphyry	$1.49 ore, $1.12 waste	$1.49 ore, $1.12 waste*
Processing Cost ($/t Ore)		$2.22	$3.73
G & A Cost		$0.60**	$0.95
Mill Recovery	Au	65%	40%
	Cu	0%	88%
Slope Angles		45° for all	
Royalty		1.7%	
Calculated Cutoff Grades		0.18g Au/t***	0.10% Cu only

* Note that the mining cost was increased by $0.03/t for every 12m bench mined below elevation 3328mRL.
** Note the G&A cost assumed an ore processing rate of 13Mtpa when Whittle work was done.
*** Note for calculation and reporting of mineral reserves a cut-off of 0.2g/t for dump leach oxide gold was used.

The reserve classification is also consistent with criteria laid out in the Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects of December 2005 (the Instrument) and the classifications adopted by CIM Council in November 2004. The reporting of reserve classification under the JORC Code and the Canadian NI 43-101 systems are essentially identical.

Linton John Kirk, who is a fellow of the Australasian Institute of Mining and Metallurgy and has more than 30 years relevant mining experience, assumes responsibility for the reserve estimate for the La Arena deposit. Linton Kirk is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code and CIM Standards respectively. Linton Kirk is the Chief Mining Engineer for Coffey Mining.

Table 17.2.1_2
La Arena Project
Iamgold Mineral Reserve 2006

Ore Type	Oxide Ore			Secondary Ore			Primary Ore			All Ore				
	Mt	g Au/t	%Cu	Mt	g Au/t	%Cu	Mt	g Au/t	%Cu	Mt	g Au/t	Oz Au	%Cu	000's lbs Cu
All Sectors														
Sediments	29.9	0.65	0.10	-	-	-	0.7	1.09	0.10	30.5	0.66	644,500	0.01	8,800
Porphyry	5.2	0.41	0.10	10.7	0.43	0.53	81.7	0.36	0.46	97.6	0.37	1,167,800	0.45	960,200
Total	**35.1**	**0.61**	**0.10**	**10.7**	**0.43**	**0.53**	**82.4**	**0.37**	**0.46**	**128.1**	**0.44**	**1,812,300**	**0.34**	**968,900**

*Rounded numbers may not sum exactly.

Table 17.2.2_2
La Arena Project
Rio Alto Mineral Reserve

Ore Type	Oxide Ore			Secondary Ore			Primary Ore			All Ore				
	Mt	g Au/t	%Cu	Mt	g Au/t	%Cu	Mt	g Au/t	%Cu	Mt	g Au/t	Oz Au	%Cu	000's lbs Cu
All Sectors														
Sediments	29.5	0.62	0.01	0.1	0.34	0.32	0.1	0.45	0.18	29.7	0.62	586,886	0.01	1,032
Porphyry	4.3	0.49	0.16	13.0	0.36	0.52	127.4	0.30	0.40	144.8	0.30	1,414,689	0.40	1,273,861
Total	**33.9**	**0.61**	**0.03**	**13.1**	**0.36**	**0.52**	**127.5**	**0.30**	**0.40**	**174.4**	**0.36**	**2,001,575**	**0.33**	**1,274,910**

*Rounded numbers may not sum exactly.

Note: The oxide ore includes 30.2Mt suitable for a gold dump leach operation plus 3.7Mt suitable for recovering copper in the copper plant. The lbs of copper in the mineral reserve for sediments is only that associated with this 3.7Mt of ore.
Only a small amount of silver is contained in the oxide mineral reserve and is not reported as it is not material.

18 OTHER RELEVANT DATA AND INFORMATION

"Additional Requirements For Technical Reports On Development Properties And Production Properties" is incorporated into this Section.

The overall Project is at a pre-feasibility study level, as defined by National Instrument 43-101, although some aspects of the work to date is to a lower level, such as the tailings storage. Most of the following is based on the November 2006 PFS and subsequent work that has been reviewed and updated or that remains current.

18.1 Mining

In the November 2006 PFS and the March 2007 Scoping study Iamgold has assumed owner mining as the base case, although the company received a budget estimate for contract mining for the gold oxide operation from San Martin, a local contractor known to Coffey from previous work. Rio Alto's preferred approach is contract mining and this is assumed to be the development case.

Rio Alto propose to proceed with a staged approach to the project, commencing mining and processing for the gold ore dump leach and once this is operational expand the project by mining and processing the copper ore.

Mining is proposed to be by conventional shovel and dump truck methods and to be similar to other relevant operations in Peru.

Mining is planned to be on a two 12 hour shift 7 day per week basis.

18.1.1 Drill and Blast

The preliminary geotechnical investigation determined that the rock mass is altered to varying degrees. The alteration indicated that not all material would require blasting. It was assumed for the PFS that 90% of the ore would require blasting and 92% of the waste. The entire rock mass will require drilling for grade control purposes. It is expected that most blast holes will have some groundwater present. The proposed explosive is a 50:50 ANFO/Emulsion blend. The variability of rock strength will vary the powder factor throughout the pit. The forecast average powder factor is 0.22kg of explosives per tonne of rock. It is proposed to use non-electric initiation for blasts.

Iamgold assumed "*drilling will be executed using rotary blast hole drills with a hole diameter of 171mm. The drilling pattern will be 5.6m x 5.6m. Hole drilling will be 6m deep and sub-drilling will be 1.0m deep in the porphyry material and 1.8m deep in the oxide material. Control on the final walls will be executed with smaller drillholes (64mm).*"

Although this approach appears to be working adequately at the nearby La Virgen mine Coffey is concerned that this drill diameter, pattern and bench height might result in a suboptimal distribution of explosives, in the ore zone in particular and for dump leaching of the gold oxides especially.

More work is needed on this but drilling smaller diameter holes (say 140mm, with a commensurate closer pattern and better distribution of explosives, which should improve fragmentation and hence leach recovery) should be considered for the oxide ore.

Evaluation of increasing the bench height should be done for the copper orebody and associated waste. It is also expected that perimeter or "trim" drill and blasting could be done successfully with a larger diameter than 64mm, at least 89mm.

18.1.2 Load and Haul

The PFS included selection of the mining fleet by IMC. The load and haul fleet was selected to achieve close to 120kt per day production. Loading operations were to be carried out using a fleet of up to eight (8) Front End Loaders (FEL's). The FEL's were to have a bucket capacity of 11.9m^3. The FEL's would load a fleet of up to 28 x 91t capacity haul trucks. The number of haul trucks was based on an average haul distance. Engineering and cost estimates were done by Cambior personnel based on their experience and knowledge of comparable operations and on mining activities in Peru.

Ore is to be hauled to the run-of-mine (ROM) pad adjacent to the primary crusher or to the dump leach pad.

The March 2007 Scoping study proposed to mine the oxide material using a conventional 180t hydraulic face shovel and the same 91t capacity truck fleet. Engineering, fleet sizing and cost estimates were done by Iamgold personnel based on their experience and knowledge of comparable operations and on mining activities in Peru.

The selection of the shovel/truck fleet was based on the higher productivities from shovels and difficulties being experienced in sourcing large FEL tyres and this fleet is endorsed by Coffey Mining and has been assumed for this report.

The load/haul fleet will be supported by ancillary equipment including dozers, graders water trucks and service trucks. The ancillary equipment will be used to construct and maintain roads, stockpiles and waste dumps.

Waste will be hauled to two separate waste dumps, retention walls for water control and tailings storage and where required for construction. Selective dumping and encapsulation of some waste material will be required to minimise any formation of acid.

18.1.3 Grade Control

It is proposed that a representative sample of the drill cuttings produced from blast holes be used for grade determination. The samples will be analysed in the on-site laboratory designated for this purpose.

In areas where blasting is not required grade control sampling will still be required. It is also expected that some areas, such as sharp or material type sharp boundaries or areas of high presence of groundwater, may not be suitable for sampling from blasthole drilling but work on this has yet to be done.

No meaningful work on estimating mining dilution or ore loss in mining has been done yet and needs to be investigated as part of the future feasibility study work. For purposes of mineral reserve estimation Coffey Mining has assumed that 2% of the ore would be lost.

18.1.4 Other Mining Activities

Haul roads will be constructed by the owner when required and as suitable material becomes available.

The main function of mine services is to provide assistance to the production units. The work to be performed includes, road maintenance, pit dewatering, water management and waste dump preparation and maintenance.

It is assumed that the mining department will direct dump or rehandle ore into the mill crusher at all times. There will be a need to rehandle some ore when mining is at a different rate to crushing, meaning some ore will be stockpiled if mining is faster than the crushing rate or it will be reclaimed from stockpile when mining is less than the crushing rate. Also there are always some times when there is no ore mining at all and other times when there is no crushing, such as crusher downtime. It is also clear in the PFS that secondary ore will need to be stockpiled when it is more than 15% of mill feed from the pit, and later on this material will be reclaimed. In the PFS this is 2.7Mt of material. Coffey Mining has assumed that 20% of all mill feed ore will have to be rehandled.

The La Arena project is planned to work also at night. Portable lighting towers will be required where there is a lack permanent lighting. Permanent lighting will be installed close to main power supplies such as at the crusher feed and road intersections adjacent to the crusher pad.

18.2 Geotechnical Input

The pit slope angles have been determined on a preliminary basis to allow for an initial pit design. The work was completed for Cambior by DCR Ingerios S.R. Ltda (DCRI) of Lima Peru and Golder Associates of Mississauga, Ontario Canada. The calculation of wall angles was based on the geotechnical mapping of the exploration drilling. Little information has been gathered outside the ore structure. Rock samples were tested for unconfined compressive strength, uniaxial compressive strength, rock densities and tilt table tests.

The influence of groundwater on pit stability was studied although only very preliminary work has been completed on determining the presence and effects of groundwater on mining operations. A reasonably simplistic and possibly optimistic approach has been made to date with "*the stability analysis assumes a Category 2 water table where Category 1 is dry and Category 5 is completely saturated*".

There is a statutory requirement in Peru to provide for pseudo static conditions created by seismic events when designing open pit slopes. A figure of 0.12g was adopted for the slope designs.

The pit slope and mine design parameters used for the gold oxide and porphyry areas are as included in Tables 18.2_1 and 18.2_2.

Table 18.2_1
La Arena Project
Porphyry Open Pit Wall Angles

Section	1	2W	2E	3	4	5W	5E	6	7
Final Bench Height	165	200	170	135	310	490	350	310	300
Final Slope Angle	45	30	45	45	38	35	43	40	43
Inter-ramp Height	120	120	120	120	120	120	120	120	120
Inter-ramp Bench Width (m)	20	20	20	20	20	20	20	20	20
Inter-ramp Slope (deg)	50	33	50	50	42	38	48	44	48
Bench Characteristics									
Bench Height (m)	6	6	6	6	6	6	6	6	6
Berm Width (m)	2.5	2.5	2.5	2.5	3	3	3	3	3
Number of Benches	20	20	20	20	20	20	20	20	20
Bench Slope (deg)	67	41	67	67	58	53	68	62	68

Table 18.2_2
La Arena Project
Oxide Open Pit Wall Angles

Section	8	9	10W	10E
Final Bench Height	140	120	225	125
Final Slope Angle	50	45	45	45
Inter-ramp Height	90	90	90	90
Inter-ramp Bench Width (m)	20	20	20	20
Inter-ramp Slope (deg)	50	52	52	52
Bench Characteristics				
Bench Height (m)	6	6	6	6
Berm Width (m)	2.5	2.5	2.5	2.5
Number of Benches	15	15	15	15
Bench Slope	67	70	70	70

18.3 Hydrogeology and Hydrology Input

18.3.1 Hydrogeology

The groundwater conditions were estimated using the data from existing piezometers. Water was found in some of the boreholes both in breccias and porphyries. Hydrogeological studies and observation indicate that breccias are more permeable than porphyries. During mining, surface runoff water may filter into the pit walls, adversely affecting their stability. It will be necessary to drain this water out of the pit.

18.3.2 Hydrology

The project area is confined within the Sanagorán River, Santa River and Chicama River basins. The Sanagorán Basin is located on the eastern side of the Andes divide (Atlantic basin) and the Santa and Chicama river basins are located on the western side (Pacific basin). The Sanagorán River is part of the Marañon River basin that flows in a north-westerly direction into the Marañon River; a tributary of the Amazon River.

Data from adjacent river systems has been used to approximate river flows. The current mine plan indicated that La Arena Project will be largely located within the Chichircucho (or Sanagorán) sub-basin and a small area of the La Arena Project within the Yamobamba sub-basin. Drainage from the mining and treatment operations may affect these streams if not controlled.

Table 18.3_1
La Arena Project
Predicted Stream Flows

Sub-Basin	Area (Km^2)	Avg Annual Flow (m^3/s) ($Q=0.0691*AREA^{0.7037}$)
Chichircucho	23.59	0.64
Yamobamba	195.22	2.83

There is a lack of historic meteorologic data for the La Arena site. Three weather stations were used to approximate data for the La Arena project. The stations include La Arena, Huamachuco station and the station located at Cajabamba. The information from the meteorological station at La Arena showed a slightly positive 5-10cm of precipitation on a yearly basis. But, for the months of May, June, July and August, the evaporation is higher than the precipitation. A storm event of 83mm in 24 hours recorded at the nearby Cajabamba station was used to calculate a conceptual probable maximum precipitation event (PMP). For most of the year, precipitation generally exceeds evaporation. However, in the dry period of May through to September will show a water deficit. Since no evaporation data was available at the Huamachuco station; the evaporation data came from a weather station located at Cajabamba. This station is at a lower elevation (2,500m above sea level) and is located to the north of the La Arena Project.

Table 18.3_2
La Arena Project
Rainfall and Evaporation data for Cajabamba Station

Cajabamba Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Precipitation (mm)	124	129	104	93	26	10	8	10	36	93	107	111	851
Evaporation (mm)	73	50	59	58	78	91	108	119	101	88	98	80	1,003

18.4 Pit Optimisation

18.4.1 Previous Optimisation Work

The combined (Au and Cu) project pit optimisation was done by IMC in 2006 as part of the PFS. The slope parameters were based on Section 18.2 above. Only Measured and Indicated Resources were given any value, Inferred Resources were treated as waste.

The main input parameters to the floating cone optimisation were as per Table 17.2.1_1. It was not stated in the PFS what pit shell was used for subsequent pit design work.

18.4.2 Rio Alto Optimisation Work

Coffey Mining carried out Whittle pit optimisations on the combined (Au and Cu) resource model. The base case input parameters used are as shown in Table 18.4.2_1.

Table 18.4.2_1
La Arena Project
Coffey Mining Pit Optimisation Base Case Parameters

Parameter		**Dump Leach**	**Mill**
Market Price		$750 per ounce Au / $1.95 per lb Cu	
Mining cost ($/t mined)	Sediment	$1.49 ore, $1.12 waste	$1.49 ore, $1.12 waste
	Porphyry	$1.49 ore, $1.12 waste	$1.49 ore, $1.12 waste*
Processing Cost ($/t Ore)		$2.22**	$3.73
G & A Cost		$0.60***	$0.95
Mill Recovery	Au	65%	40%
	Cu	0%	88%
Slope Angles		45° for all	
Royalty		1.7%	

* Note that the mining cost was increased by $0.03/t for every 12m depth mined below elevation 3328mRL.
** Note the dump leach processing cost includes the cost of pad expansion, refer Section 18.16.2 for details..
*** Note the G&A cost assumed an ore processing rate of 13Mtpa when Whittle work was done.

Seven different runs were done, as shown in Table 18.4.2_2, for the reasons included. The Mineral Resources were based on the Indicated and Inferred Resources (there are no Measured Resources) contained within the optimum undiscounted cashflow shell from Run 4. The Mineral Reserves were calculated within the optimum average discounted cashflow shell from the base case Run 1 although for oxide gold reserves a larger shell section was selected by Rio Alto which resulted in a slightly lower overall discounted cashflow but higher tonnes of ore.

Table 18.4.2_2
La Arena Project
Pit Optimisations Summary

Run	**Au Price/oz**	**Cu Price/lb**	**Resources**	**Costs**	**Dump Rate**	**Reason**
1	750	1.95	Indicated	Base case	13.0Mtpa	Reserves
2	750	1.95	Indicated	Less $0.45/t dump	13.0Mtpa	Dump sensitivity
3	750	1.95	Indicated	Less $0.03/t below 3328mRL	13.0Mtpa	Mining cost sensitivity
4	900	2.50	Ind + Inferred	Base Case	13.0Mtpa	Resources
5	750	1.95	Ind + Inferred	Base Case	13.0Mtpa	Effect of Inferred
6	750	1.95	Indicated	Base Case	4.3Mtpa	NPV sensitivity
7	750	1.95	Indicated	Base Case	8.6Mtpa	No mill, dump only

The conclusions from the different optimisations are:

- Run 2: The dump leach reserves were not sensitive to a lower operating cost.
- Run 3: The NPV was not sensitive to the incremental mining cost at depth.
- Run 5: The effect of including Inferred Resources is not permitted under NI43-101 but is a guide to what additional exploration may yield. The results showed no real difference for the dump leach but a significant increase in tonnes for mill feed (about 20Mt) for the optimum average discounted shell.
- Run 6: The undiscounted cashflow was similar, as expected, but the average discounted result was significantly lower in both dump leach and mill tonnes and overall NPV.
- Run 7: The dump leach only (no mill) resulted in a similar amount of oxide reserves but a much lower NPV (only about \$84M compared to Run 1 of over \$600M. Note all optimisations do not make any allowance for capital expenditure and should only be used as guide).

18.5 Mine Design

No new work has been done on mine design since the November 2006 PFS although the Whittle optimisation work recently carried out by Coffey Mining generally supports the PFS pit design.

18.5.1 Design Basis

The November 2006 open pit design work was completed by Independent Mining Consultants of Tucson Arizona (IMC). The design is based on the optimisation work also conducted by IMC at a gold price of \$550/oz. The wall angle parameters supplied by DCRI and Golder were adopted for the design.

The haul road was designed to match the selected Caterpillar 777 haul trucks proposed for the project. The haul ramp is designed to be 25m wide and at a grade of 10%.

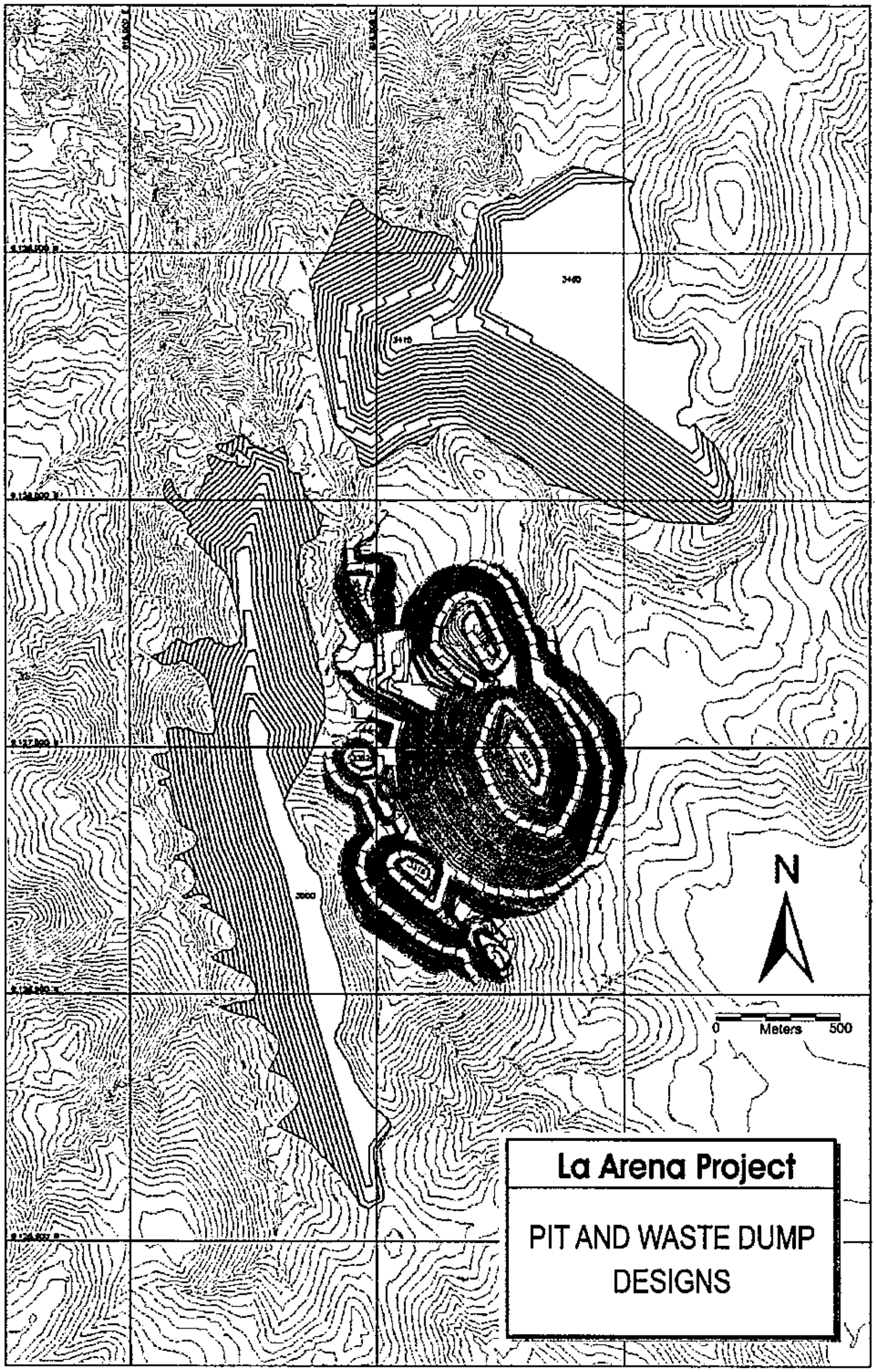
18.5.2 Pit and Waste Dump Designs

The November 2006 PFS pit design is shown in Figure 18.5.2_1. This design appears reasonable except for the very high western slope of the copper porphyry pit section, which Coffey Mining believes should have at least one wide berm inserted, about one third of the way down, for increased safety (to allow clean up of loose material) and to also divert water (rainwater and groundwater) along this berm and out of the pit.

The oxide waste dump design on the steep western slope to the west of the pit design needs a geotechnical evaluation of this slope and alternative dumping areas may be required.

The sulphide waste dump is shown to the north of the final pit. All final dump slopes have an overall face angle of 26.6 degrees (2 to 1 ratio). It is also acknowledged in the November 2006 study that not much work has gone into temporary or final haul road design and layout.

Figure 18.5.2_1
Iamgold Pit and Waste Dump Designs



Final Pits and Dumps
October 10, 2006

18.6 Mineral Processing and Recoverability

The proposed mineral processing of the oxide gold ore and the porphyry copper primary and secondary copper ore is discussed in detail in Section 16. The gold bearing oxide material will be processed via a dump (run-of-mine ore, no crushing) leach and the copper sulphide ore will be treated via a conventional grinding and flotation circuits.

The dump leach will consist of a two stage pad leach operation, processing approximately 24,000tpd of oxide material, over 4 years for a total of approximately 30.2Mt of ore. Gold recovery is assumed to be 65% and gold production from the dump leach is estimated to total 385,000 ounces.

The primary and secondary sulfide ore along with any of the copper-rich oxide material that is not amenable to heap leaching will be milled onsite in a 24,000tpd per day flotation plant. It will consist of a crushing and grinding circuit generating an 80% passing 95 microns pulp that will be processed via a conventional flotation circuit with rougher, pre-cleaner, regrind and three cleaning stages to produce a copper-gold concentrate grading approximately 28% Cu at 88% recovery. Total gold recovery to the copper concentrate is approximately 40%. Total metal production for the milling circuit is expected to be 1.1 billion pounds of copper and 556,000oz of gold over a 17 year period.

18.7 Tailings Storage

Golder Associates (Golders) were engaged to provide advice with respect to tailings storage for the La Arena Project. The work undertaken by Golders comprised a scoping level Tailings Disposal Options Study completed in August 2006. This was followed by a technical memo dated September 2006 which provided additional information and refinements to the August options study.

The tailings storage facility (TSF) design presented in the PFS was for a tailings production of 100Mt over 11.4 years at 24,000t/day. The study was based on assumed parameters, as no geotechnical investigations or tailings testwork has been carried out. Some of the mine waste from pits is understood to be potentially acid forming (PAF). No geochemical testwork was carried out on the tailings, and Golders assumed that the tailings would be PAF.

The options study examined four basic disposal types and seven options / sites including two options for cyanide tailings disposal.

The disposal options considered were conventional slurry, thickened tailings, paste and filtered tailings. Sites were selected based on watershed considerations and risk, with the risk assessment focussed on potential environmental impacts, particularly potential impacts on the local population. It was concluded, based on the options study that thickened tailings disposal was the preferred option over conventional slurry disposal based on a cost per tonne and lowest risk. No detailed cost estimates, with breakdowns, were presented as part of the options study.

18.7.1 Design

The TSF, as documented in the PFS, was not at a site identified in the Golders August 2006 study but it was included in the later Golder memo. The current TSF site was adopted in order to reduce disturbance outside the catchment where the pits and waste dumps will be located and hence would already be potentially impacted. The TSF is in the sub-catchment referred to as the Sayapampa sub-basin. A water treatment area will be located downstream of the TSF, below a confluence of several watercourses.

The proposed TSF will be a side of hill type facility. A downstream containment embankment will be constructed utilising mine waste from the pit operations. Tailings from the mill to the disposal site will be pumped at nominally 50% solids. At the disposal site the tailings will be further thickened to 65% solids. Tailings will be discharged via several open end discharges to form a sloped beach to the containment embankment. Bleed water and rainfall runoff would filter through the embankment and report to the water treatment downstream. Golders stated that the upstream slope of the embankment would require a sand filter to prevent tailings migrating into the waste rock:

It is understood that the documented TSF will have a storage capacity for approximately $32Mm^3$, however the required capacity for the PFS mine life (16 years) is approximately $65Mm^3$, that is a TSF asset life of 5 to 6 years. The PFS comments that there may be a potential for in-pit tailings storage late in the mine life, after 7 years, but this may not be practicable and shouldn't be counted on. The mineral reserve tonnes reported in this report (144Mt) are also significantly greater than the PFS, meaning even more tailings storage will be required. The Golders Disposal Options Study (2006) identified 5 flotation tailings sites, 4 of which should have more than sufficient capacity to store $33Mm^3$ of additional tailings.

Rio Alto has not yet filed any permit applications for the TSF.

18.7.2 Discussion

The design beach slope adopted was 5% for thickened tailings and 10% for paste tailings. Based on Coffey's experience at base metal mines in Australia, the 5% beach slope for a tailings thickened to 65% may be optimistic unless the tailings have a coarse grind. The consequence of shallower beach slopes would be a larger downstream containment embankment.

The estimated cost for the tailings dam and tailings line (upfront capital, US$3M plus 1st stage, US$2.9M and 2nd stage US$14.1M, costs) is US$20 million. This represents a cost per m^3 of tailings disposed of approximately $0.3 to $0.35/m^3$ which is not unreasonable (but may be underestimated by some $\$0.10/m^3$). It should also be noted that staging is not mentioned in the text relating to the TSF, only capacity details as mentioned.

No comment on TSF water balance / water return was made in the PFS. However there was comment that the evaporation is greater than precipitation between May and August, otherwise precipitation exceeds evaporation for the remainder of the year.

The following table presents a desktop assessment of the key risks associated with tailings storage. Please note the category (low, medium, high) is a subjective assessment of the residual risk at present. That is the risks may lower in the future as additional information becomes available (ie tailings geochemical testing).

Table 18.7.2_1
La Arena Project
Tailings Storage Risk Analysis

Subject	Category	Comment
Design – Inclusion of sand filter layer on embankment upstream face	Low to Medium	Greater construction cost.
Construction – Cost overruns due to haul distance from pit or Contractor pricing above expectations	Medium	Contingency to be allowed in budget.
Operation – Beach slope being shallower than design	Low to Medium	Possible higher downstream embankment required. Additional cost.
Operation – ARD. Large area of tailings beaches potentially exposed during operations	Low to Medium	Potentially greater treatment costs. Tailings geochemical characterisation required .
Operation – TSF stability	Low	Thickened tailings concept adopted. Project area has high seismicity
Closure - TSF stability	Low	Thickened tailings concept adopted. Project area has high seismicity
Closure – ARD. Erosion of cap on TSF exposing tailings	Medium	Tailings geochemical characterisation required before proceeding to next phase. Thicker cap maybe required hence greater closure costs

18.7.3 Closure

No specific details appear to be provided on the closure of the TSF although B&G Engineering have estimated preliminary closure costs for the TSF of $4.2M.

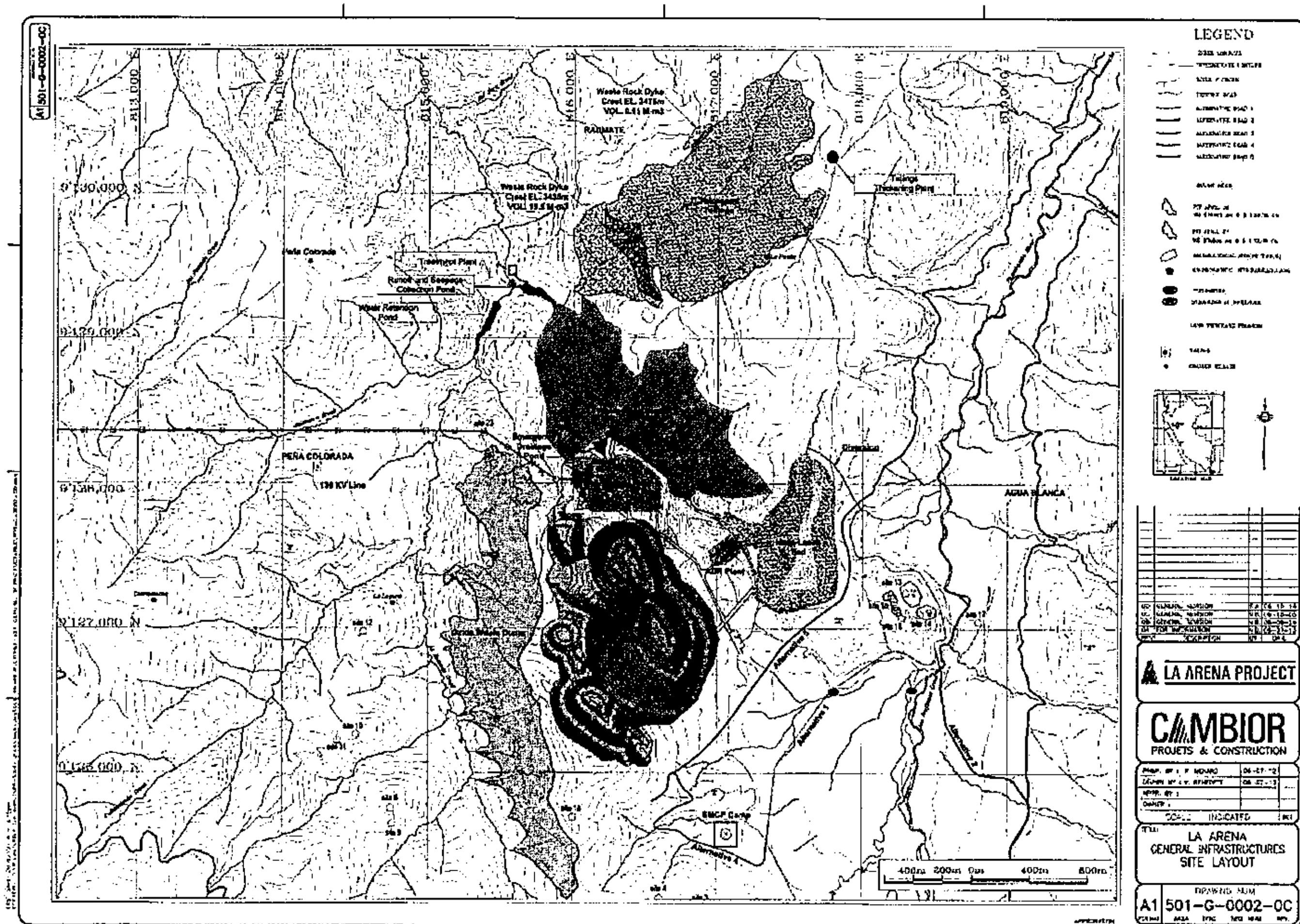
The potential of erosion of any mine waste cap, which may expose PAF tailings, is one issue that will need to be carefully considered. Closure issues in relation to the TSF design concept should be addressed in more detail as the project proceeds to the next stage.

18.8 Site Layout

The project is designed to fit in a relatively compact site where only one watershed is affected and only one final effluent will need to be controlled. A plan of the site layout from the PFS is shown in Figure 18.8_1.

Restricting all major items within one watershed to limit the project impact on the area is a suitable aim but it may be difficult to adhere to with more detailed planning. For example the waste dump designs are not seen as optimal for minimising haulage costs or possible future stability. Also the northern end of the final pit is very close (meaning within a normal blast clearance distance) to the copper plant and the northeast side of the final pit is also close to the gold leach pad and associated infrastructure.

Figure 18.8_1
Site Layout



It is also very clear that the new public road being constructed at present will require relocating some 6km of this road.

Areas for stockpiling topsoil and low grade material have not yet been identified and will need to be considered in future work. In general topsoil would be stockpiled as close to where it was removed from if this is where it will be used later, such as tailings and dump areas. For the rest, to reduce costs later, it would also be stockpiled near to it's final use. The volumes/areas for topsoil are not large so this is not a material issue. The stockpiled low grade copper ore could exceed 3Mt during the mine life and should be as near to the crusher as possible, which is currently limited in area.

18.9 Mine Production Schedule

In the PFS five mining areas were defined for planning purposes, Ethel, Brecha Nueva, Calaorco, Porfido Norte and Porfido Sur. The mine production schedule took into account the ore characteristics of each mining area. One major constraint impacting the mine production schedule is the limitation of secondary ore to mill to a maximum of 15% of the total mill feed and the lack of stockpiling space. Most of this relatively high grade copper ore is quite shallow both at Brecha Nueva and Porfido Norte and would have constituted a sizeable portion of the early milling feed. In order to avoid large stockpiles at the beginning of the mine life the mining of Brecha Nueva was put off in the final years (9 to 11) so that its secondary ore could be mixed with the primary ore mined from Porfido Sur. The plan shows the need to stockpile up to 2.6M tonnes of secondary ore from year 3 to year 6. This ore will be reclaimed from year 7 to year 10.

Pre-stripping is required during the early stage of the project to expose the ore but also to generate material for construction purposes.

The PFS mine production and mill feed schedule is summarised in Table 18.9_1.

Table 18.9_1
La Arena Project
Rio Alto Mine Production and Mill Feed Schedule

	YEAR	Pre-production		1 (2010)	2	3	4	5-14 (2028)	Total
Oxide Tonnage	(kt)	-	-	8,640	8,640	8,640	7,952	-	30,226
Grade Gold	Au (g/t)	-	-	0.61	0.61	0.61	0.61		0.61
Total Porphyry (= mill feed)	(kt)	-	-	-	-	8,400	8,400	117,600	144,200
Grade Gold	Au (g/t)	-	-	-	-	0.32	0.32	0.32	0.32
Copper	Cu(%)					0.40	0.40	0.40	0.40
Mining Waste - Total	(kt)	-	3,571	10,851	14,422	17,996	17,102	99,584	161,595
Total Tonnage	(kt)	-	3,571	19,491	23,062	35,036	33,454	217,184	331,798
Stripping Ratio (W:O)		-	-	1.26	1.67	1.06	1.05	0.85	0.93

Rio Alto has not yet done any detailed mine scheduling and have used a simplified mine schedule in their financial model using average mining rates, average strip ratios and average grades. This is summarised in Table 18.9_2.

Table 18.9_1
La Arena Project
PFS Mine Production and Mill Feed Schedule

		YEAR	Pre-production		1	2	3	4	5	6	7	8	9	10	11	12	Total
Oxide Tonnage		(kt)		1,720	4,379	4,378	4,379	4,380	4,380	4,379	4,378	2,709					35,082
Grade	Gold	Au (g/t)		0.74	0.67	0.58	0.66	0.61	0.65	0.56	0.54	0.55					0.61
Total Porphyry		(kt)		20	4,375	9,782	9,457	8,183	8,121	7,518	8,619	8,759	8,759	8,760	8,760	1,918	93,031
Grade	Gold	Au (g/t)		0.33	0.38	0.42	0.42	0.38	0.38	0.41	0.33	0.32	0.32	0.32	0.41	0.51	0.38
	Copper	Cu(%)		0.54	0.48	0.51	0.52	0.44	0.43	0.48	0.42	0.43	0.43	0.44	0.52	0.61	0.47
Mining Waste - Total		(kt)	1,500	5,998	19,098	26,565	27,129	28,069	29,533	31,851	30,751	31,646	19,977	4,052	2,712	506	259,387
Total Tonnage		(kt)	1,500	7,738	27,852,000	40,725	40,965	40,632	42,034	43,748	43,748	43,114	28,736	12,812	11,472	2,424	387,500
Stripping Ratio (W:O)				3.4	2.2	1.9	2.0	2.2	2.4	2.7	2.4	2.8	2.3	0.5	0.3	0.3	2.0
Add to Stockpile - (secondary)		(kt)		20	875	1,021	681										2,597
Grade	Gold	Au (g/t)		0.33	0.33	0.45	0.54										0.43
	Copper	Cu(%)		0.54	0.48	0.56	0.63										0.55
Remove from Stockpile		(kt)						576	638	1,241	142						2,597
Grade	Gold	Au (g/t)						0.43	0.43	0.43	0.43						0.43
	Copper	Cu(%)						0.55	0.55	0.55	0.55						0.55
Mill Feed		(t)			3,500	8,761	8,776	8,759	8,759	859	8,761	8,759	8,759	8,760	8,760	1,918	93,031
Grade	Gold	Au (g/t)			0.39	0.42	0.41	0.38	0.39	0.41	0.34	0.32	0.32	0.32	0.41	0.51	0.38
	Copper	Cu(%)			0.48	0.51	0.52	0.45	0.44	0.49	0.42	0.43	0.43	0.44	0.52	0.61	0.47

18.10 Project Infrastructure and Services

The infrastructure required to support the La Arena Project includes the following: site roads (access and re-route), campsite complex, administration building, warehouse, truck workshop, fuel and lubrication storage and dispensing, municipal works including potable water, fire water, sewage treatment, power distribution, telecommunication and security buildings.

18.10.1 Roads

The site access road is discussed in Section 5.1.

The development of the Project will require the construction of a bypass road, for a portion of the newly upgraded Trujillo-Huamachuco road crossing the concession. The cost of this deviation of the road will be charged to the company.

Five (5) alternatives were considered in the PFS. The alternative selected had a length of ±2km and would be built on flat land with solid foundations. It would contour the pits and leach heaps at a safe distance. The road will be constructed to Peruvian codes and accommodate public vehicles.

This diversion will be revised during the next stage of work but an allowance of $4.1M has been included in the capital cost.

There will a requirement to construct a number of site roads including access from the main gate to the concentrator, gold recovery plant, truckshop, administration building and the campsite. Roads to the tailings area, mine and dumps are included in the mining section.

The site roads are typically 15m wide and built from onsite materials. Adequate drainage work is also a necessity. A total of 5km of site roads were included in the PFS.

18.10.2 Accommodation

For the PFS the site chosen for the campsite will be an extension of the existing exploration camp located 1km from the mine site above the high water level near the Yamobamba River. The PFS capacity of the camp was 300 persons but Rio Alto plan to accommodate the minimum number of personnel on site and bus employees in from villages and towns in the area. The newly upgraded road will make this more attractive.

The details of what is required for the construction camp and how this will be adapted and used during operations is to be evaluated in the next stage of work.

18.10.3 Offices, Workshops and Storage

In the PFS the administration office is 1,350m^2 and includes office space, open work stations and training, conference, reproduction and service rooms. Mine site security offices and dry area/change rooms are located in the building.

The truck shop in the PFS is a structural steel building of 20m by 90m, covered by pre-painted metal siding and roofing. For the development case of contract mining this building may be provided by the contractor but for adequate vehicle bays, welding area, offices and parts and consumable storage a larger building will be required.

A separate light vehicle maintenance and repairs workshop for all of the owner's fleet is also required but in the PFS this was part of the truck shop.

A wash bay of $225m^2$ to accommodate high pressure wash down of the haul trucks and other mine equipment was allowed for in the PFS. This includes a capture system for the sediments as well as any fugitive hydrocarbons.

The PFS warehouse is assumed to be adjacent to the administration building and will also be a structural steel building 40m in width, 60m in length and 8m in height. The building is equipped with shelving space for inventory material on one side and pallet racking on the other side. The warehouse personnel offices are within the building. A fenced yard is adjacent to the warehouse building and is used for storage of sizeable parts and bulk material.

It is expected that there will be at least three warehouses for the Project, one as part of the mining contractor's facilities, one within the copper plant area and a third to house the remainder of the owner's stores, including for light vehicles and dump leach consumables.

18.10.4 Laboratories

The PFS has allowed for two (2) laboratory facilities. The first laboratory will be situated in the gold extraction plant and will be equipped with gold specific instrumentation. The second laboratory will be a stand alone building, which will be suited for exploration and mining operations' sample preparation, as well as facilities for assaying, environmental control issues, etc. Depending on the final site layout the dump leach gold laboratory may be combined with all other laboratory duties as above plus there may be a small lab included in the copper plant area.

18.10.5 Fuel and Lubrication Storage

In the PFS a fuel storage area is provided adjacent to the truckshop. The fuel storage capacity is designed for 284,000 litres (75,000 US gallons) and will provide for approximately one week of production. Also included is an 11,400 litres (3,000 US gallons) storage capacity for gasoline as well as a dispensing system for both products. Lube oil, coolant, transmission oil and grease will also be available.

This capacity is low and should be evaluated further after the mining design and scheduling work is updated. Fuel storage for back-up power generation also needs to be considered.

18.10.6 Explosives Storage

The PFS included *"An amount of US$750,000 is included for pumps, piping, settling ponds and also for explosives storage."* No details have been provided to Coffey Mining but the likely total costs for raw materials storage, emulsion explosives manufacturing facility (or storage if the emulsion matrix is manufactured elsewhere), high explosives magazines (two of), plus allowance for offices and a workshop to service the explosives trucks and light vehicles could easily cost $1M. This could be paid as a lump sum to the explosives supplier upon site establishment or it could be recovered over time in the management fees or bulk explosives costs.

This area requires work in the next stage of feasibility work.

18.10.7 Water

The water balance of the entire site has not yet been completed. The PFS discussed the amount of precipitation and evaporation of the area, to start the fresh water pond design, effluent treatment process and to determine the source of the process water. The complete water balance of the new foot print will be performed during the feasibility stage and the EIA.

The water balance prepared for the leaching operations shows that an extended dry season will require additional water but for phase 2 of the pad the dump leach has a positive water balance. There may be scope to use this excess for the concentrator make-up water.

The PFS estimates that about 25 000m^3/day of water will be needed to cover the total water make-up requirement. This value will have to be assessed properly by taking into account the seasonal river flow rate.

Fresh water will accumulate in a reservoir created in the bed of the Quebrada Los Fraylones, some 2km to the northeast of the plant site. The pond volume will be confirmed once appropriate topographic, hydrographic and meteorological information are available.

A well is assumed to supply fresh water to the intermediate solution pond and to the fresh water tank located at the gold plant.

Fresh water will also be pumped to the maintenance, warehouse and administration fresh/fire water storage tank. Water from this tank will be mainly used for the washing of vehicles and a diesel-driven fire protection pump connected to the tank to supply the sprinkler ring in the buildings and yard hose stations.

Water from pit dewatering or dust suppression of mining operations has yet to be considered in any detail and needs to be part of the site-wide water balance.

Potable water is planned to be supplied from water wells drilled on site and pumped to a water treatment plant.

18.10.8 Telecommunication

The communication system for the Project is comprised of seven major subsystems in the PFS. All are integrated by a computer based management system:

- Microwave Link to the National Grid
- Mine Site – VSAT Satellite Link
- Fibre Optic Backbone connecting all areas on site
- Telephone System
- Radio Communication System of four channels, one for the mine operation, one for the mill operation, one for the maintenance, and one for security personnel.
- Closed Circuit Television for security purposes, particularly in the gold refinery area.
- Local Area Network and Computer Hardware

18.10.9 Power

From the PFS "*The projected total power demand for the La Arena project will be in the order of 20MW*" although the detailed split of this is not clear.

The options for power supply have been discussed in the PFS. "*The preferred option for the project is to extend the Trujillo Norte – Alto Chicama 138kV transmission line to La Arena by 18km. The Peruvian power regulations grant an "open-access" condition to any transmission facility built under concessions. However, since the Trujillo Norte – Alto Chicama line is privately owned by CTA (Compañía Transmisora Andina), a subsidiary of Barrick, and holds full ownership rights, an agreement will need to be negotiated with CTA to allow a connection to their existing facilities.*

The transmission line has a thermal capacity above 30MVA. Technically, it can fully supply the additional load of La Arena project. The available data shows a projected load for Alto Chicama in the order of 8.5MW and 10MW was used in the PFS."

Although Coffey has not sought expert advice on power, the capacity in this line from Alto Chicama is very important. As discussed in Section 16.7 the copper flowsheet has 2 x 5MW mills and Coffey believes these are possibly too small for the nominated processing rate of 1,000tph. In other words the limits to line capacity may result in a lower processing rate and more work on the total project power needs is a key issue going forward.

18.11 Markets

Gold, Copper and small quantities of silver will be produced from the La Arena project. In the PFS and in this Report no consideration was given to the possible separate economic recovery of molybdenum.

Part of the gold will be produced on site through the gold recovery plant which extracts gold from the solutions coming from the dump leach process. Doré bars will be produced and sent to a refinery. Based on a recent quote obtained from a Swiss refinery by Rio Alto a charge of US$2.16 per ounce of doré (approximately $3.32 per ounce of gold recovered) is included in the evaluation to cover the costs of transportation, insurance and refining. The other portion of the gold will be contained in a gold-copper concentrate that will be sent to smelter.

For the PFS Cambior Inc. mandated Neil S. Seldon and Associates Ltd (NSA) to provide current marketing and commercial key data, in order to guide Cambior in the evaluation of revenues and charges associated with the production and sale of gold-copper concentrates. Rio Alto has carried out more recent research to update the PFS.

As for the PFS a concentrate will be produced at the La Arena mine site from the Au-Cu porphyry deposit, transported by road to the port of Salaverry, Peru where it would be stored in a warehouse before being transferred onto a ship for delivery to Asian or European smelters.

18.11.1 Gold Supply and Demand

Information on the demand and supply of gold is extensive. The following is from the World Gold Council's web site:

A steady annual increase in overall identifiable gold tonnage demand, coupled with a gold price racing towards the long held $850/oz record, combined to make dollar demand for gold hit a record US $79bn in 2007. Identifiable gold demand in tonnage terms was 4% higher in 2007 than in 2006 at 3,547t.

China has now overtaken the US as the second largest volume retail market for gold jewellery after India, with demand for jewellery reaching 302t. In Turkey and the UAE 2007 brought record overall demand for gold in tonnage terms while strong growth continued in Russia with jewellery demand rising 11% to set a further annual record.

However, high and volatile gold prices had a major impact on the fourth quarter with identifiable demand falling by 17% in tonnage terms from year-earlier levels. This trend was most keenly felt in India, the world's largest and also most price sensitive gold market, where Q4 demand fell 64% on year earlier levels following 40% growth in the first three quarters. The US was also negatively impacted with a combination of a weak economy, poor retail environment and record prices denting jewellery demand which for 2007 as a whole stood 14% down on 2006 figures.

The price of gold has been volatile in recent times and this is expected to continue during the development of the Project. Rio Alto have undertaken research into what gold price is appropriate and have chosen US$750/oz as the Project base case. This is supported by prices and the trend over the last five years as shown in Figure 18.11.1_1.

Figure 18.11.1_1
Gold Price Last Five Years

18.11.2 Copper Supply and Demand

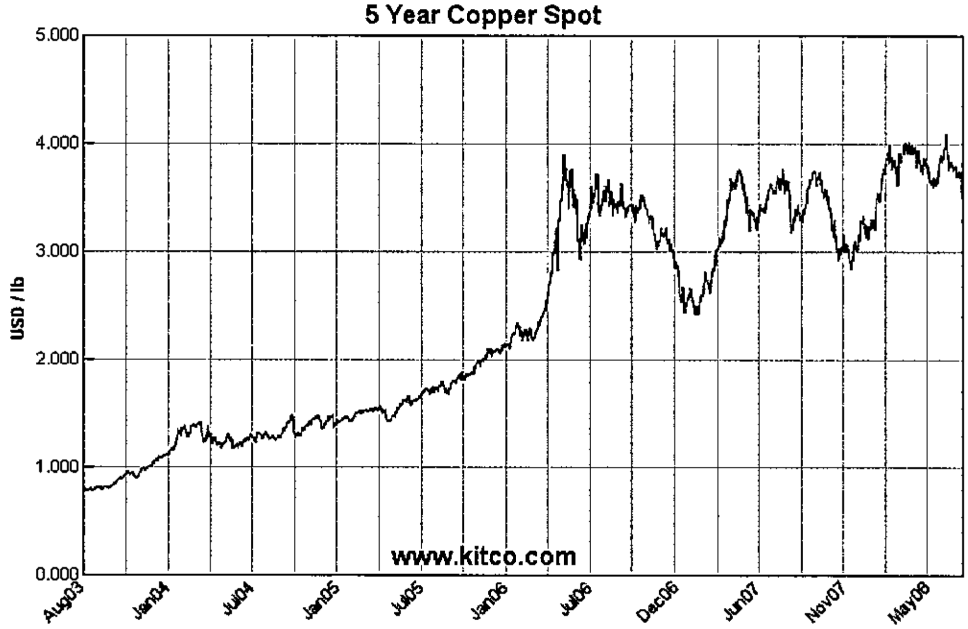
Information on the demand and supply of copper is also extensive. The following is from BaseMetals.com Limited website:

Between 1900 and 2000, copper demand grew from 500,000t to around 13,000,000t, with growth accelerating since the 1950's. With some many widespread uses it is not surprising copper demand keeps growing and now with China, India and many other developing countries starting to industrialise and urbanise, demand is likely to grow. Per capita demand for copper rises as GDP per capita rises. Japan consumes around 12kg per capita, North America consumers around 10kg per capita and Europe around 9kg per capita. The large populations of China, India, Eastern Europe and South America are all consuming less than 2kg per capita.

Copper is not a particularly rare metal and it is produced in many countries. Today copper supply is made up from two sources, the majority, 88%, comes from primary production, but of growing importance is secondary supply which accounts for 12% of total refined copper supply. Secondary supply comes from recycling copper scrap.

The price of copper has been less volatile in recent times. Rio Alto has undertaken research into what copper price is appropriate and have chosen US$2.00/lb as the Project base case. This is supported by prices and the trend over the last five years as shown in Figure 18.11.2_1.

Figure 18.11.2_1
Copper Price Last Five Years



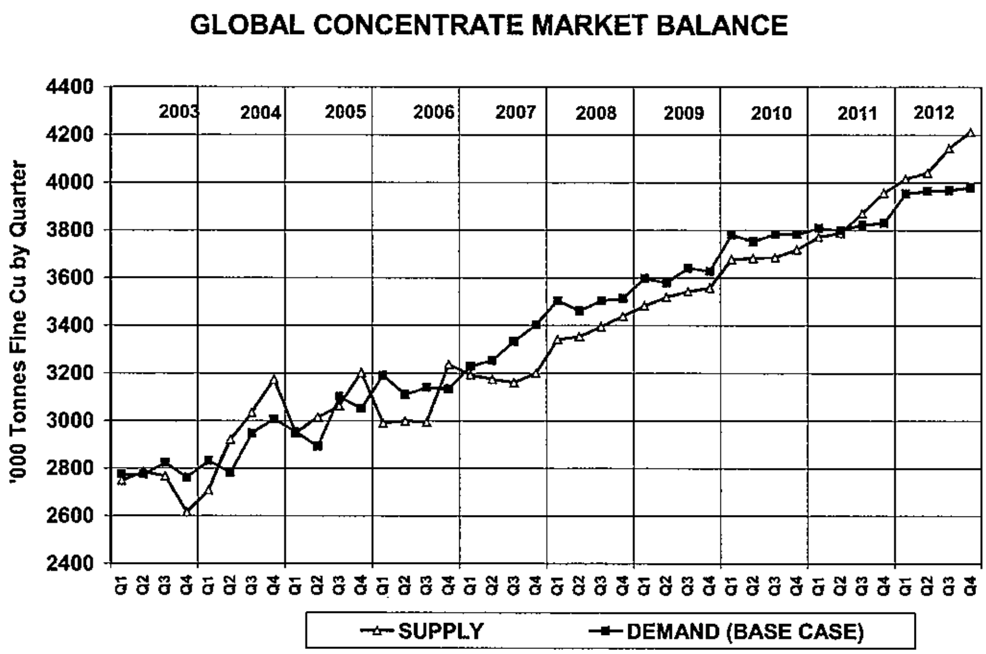
Rio Alto's research also suggests that after a short period of oversupply of copper concentrates in 2004-2005 the market has entered a prolonged supply deficit cycle. Figure 18.12.2_2 was prepared by Alfonso Gonzáles, an independent Chilean mining analyst, and illustrates the world supply and demand for copper concentrates. The figure shows that concentrate production will not be able to meet the expanding smelting capacities until sometime during 2011 - 2013.

The La Arena copper concentrate assays set out in the PFS include the following elements with the corresponding average grades over the life of the mine:

- Cu: 28.0 %
- Au: 7.13 grams per dry metric ton (DMT)
- Ag: 32.5 grams per DMT

The remaining elements in the copper concentrate will be within parameters that are generally acceptable by copper smelters and that in fact *"the concentrate can be qualified as a clean concentrate without any major penalty elements."* Consequently, the La Arena concentrate will be suitable for blending with more complex copper concentrates. This should make the La Arena concentrates much sought after by copper smelters around the world. The most likely buyers for the La Arena concentrates would be smelters in Asia and Western Europe.

Figure 18.12.2_2
Global Copper Concentrate Market Balance



18.12 Contracts

No contracts have been entered into by Rio Alto for mining, power supply, transporting or refining of concentrates or any other contract, apart from the contract to purchase the project from Iamgold, which is not part of this Report.

18.13 Environmental and Social Considerations

B&G Engineering SAC was hired by Río Alto to conduct an environmental and social due diligence evaluation in order to identify the existence of real and potential environmental and social risks in the process of the acquisition of La Arena. The due diligence evaluation was carried out in the week from November 5th to the 9th of 2007 at the Project site and in Lima.

B&G concluded that there are no "fatal flaws" or the existence of a major risk that could jeopardize the environmental or social viability of the Project. However some aspects were detected and classified as intermediate risks.

The requirements for environmental and mine closure/reclamation bonds has been included in Section 4.

18.13.1 Environmental

The main environmental issues that may be considered intermediate risks are:

- The long term management of fresh water especially in the dry season.
- The scope of the archaeological rescue plan as depicted in the Social Baseline Study.
- The time it takes to obtain licenses and permits from regulators as well as the time it takes to obtain the regulatory approval of the project's Environmental Impact Assessment (EIA).
- The long term management plan for acid rock drainage (ARD) for the sulfides in waste dumps and tailings.
- The costs associated with the closure of the mine.

B&G believe these risks can be mitigated by setting, from the very beginning, sound social and environmental policies together with professional management programs.

18.13.2 Social

The main social aspects that can be considered as intermediate risks are:

- The need for ongoing relocation and acquisition of surface land from individual owners.
- The existence of mining operations located in the vicinity of the Project whose community management methods may affect the surface land acquisition as well as on how communities will perceive the project in relation to social and environmental demands.
- The expectations that the Project development will generate within the population living in or near the Project.

18.14 Taxes

Taxation details have been included as Section 4.3.4 above.

18.15 Capital Costs

The dump leach PFS capital costs split is shown in Table 18.15_1 and these have not been changed except for the cost of additional leach pad capacity and addition of sustaining capital.

The PFS sulphide plant capital costs estimate break down is shown in Table 18.15_2 and this has been reviewed and updated by Coffey Mining as explained below the table.

A summary of the PFS capital costs, excluding the lamgold mining fleet cost of $67.3M, as Rio Alto plan on contract mining, are as shown in Table 18.15_3, were stated to be Q4 2006 costs and are compared to the Rio Alto costs.

Table 18.15_1
La Arena Au-Cu Project
Dump Leach PFS Capital Costs

Description	Cost ($000)
Reagents Preparation	250
Leach Pads (Phase 1)	3,920
Ponds (Phase 1)	1,050
Diversion (Phase 1)	500
ADR plant	4,750
Effluent Treatment	500
Pre-production Sub Total	**10,970**
Pad expansion – Production phase	**10,100**
Total	**21,070**

Table 18.15_2
La Arena Au-Cu Project
Sulphide Milling Capital Costs

Description	PFS Cost ($000)	2008 Estimate ($000)
Crushing / Stockpile	8,400	12,000
Grinding	28,700	47,570
Flotation	16,500	13,500
Thickening & Tails Storage	17,000	13,500
Water Supply	10,500	10,500
Reagents	1,507	6,500
Concentrate Thickening & Filtration	6,500	14,000
Administration / Workshops	5,530	5,530
First Fill / Capital spares	1,500	7,400
Power Supply	6,700	7,200
Infrastructure	14,800	12,550
Sub Total	117,637	150,250
Contingency	23,600	32,000
EPCM	10,000	16,900
Owners Costs & Indirects	16,900	30,400
Total	**168,137**	**229,550**

Table 18.15_3
La Arena Project
Capital Cost Comparison

	PFS ($M)	Rio Alto ($M)
Feasibility Study	8.0	8.0
Mining – Pre-Production	41.3	9.1
Processing – Dump Leach	18.0	21.1
Sub Total	67.3	38.1
Sulphide Milling	117.6	150.3
EPCM	10.0	16.9
Owner's Costs and Indirects	16.9	30.4
Sub Total	144.5	197.5
Contingency	25.2	32.0
Total	**$237.0M**	**$267.6M**

The breakdown of mill processing capital costs, including contingency and indirects, is shown in Table 18.15_2. Based on other recent work done by Coffey Mining the 2006 PFS estimate of $168M would equate to $199M in current terms, applying an escalation figure of 21% for the 2006 – 2008 time period.

The capital cost summary and comparison to the PFS is shown in Table 18.15_3.

This compares to a more specific updated evaluation of the processing capital costs conducted by Coffey Mining, based on recent quotes for capital equipment items, of $229.6M. Individual areas of the PFS that are considered low are discussed below, however the total cost remains within the accepted accuracy of a pre-feasibility study.

Items that appear significantly different include major equipment costing for grinding and concentrate filtration areas. Coffey Mining has recently obtained updated pricing for similar sized mills, and would estimate the required 10MW of milling capacity to be in the order of $16M. As the milling equipment costs represents approximately 30% of the total grinding section, a figure of $48M has been applied to this most significant area.

Given that no filtration testwork has yet been completed, a detailed description of filtration equipment has not been specified, however given recent experience with large scale pressure and vacuum disc filter equipment costs in similar installations, the PFS estimations are considered inadequate for this size operation and have been increased.

First fill and capital spares were previously very low as key spares for only one mill would cost more than the total PFS allowance.

Power supply costs have not been escalated as Rio Alto's research indicates these costs are still reasonable.

As discussed in Section 18.7 the PFS capital estimates for the tailings storage is very preliminary and is also only for approximately 100Mt of tailings. Costs for tailings disposal and storage overall is similar to the PFS after allowing for the increased contingency and EPCM costs in the Table 18.15_2 2008 costs column. The tailings costs have not been increased in proportion to the increase in mill feed reserves as further more detailed work may not necessarily increase this cost.

The reduction by Rio Alto of the infrastructure capital from the PFS totals $1.75M and is mainly due to a much smaller camp and lower costs for site buildings, which is partially offset by an increase in the allowance for moving a section of the new public road, and is reasonable.

The PFS included a contingency of 15% and Coffey Mining believes this is appropriate.

The engineering, procurement and construction management (EPCM), called engineering and construction management in the PFS, equates to 8.5% in the PFS but this has been increased to 10% of the new sub-total as shown in Table 18.15_3, which is still relatively low by international standards but should be achievable in Peru.

The increase in owner's and indirect cost estimates is mainly due to a net closure cost allowance of $7.5M (after assuming $10M as salvage value for project equipment) with some reductions made in freight, accommodation and travel due to sourcing more work from within Peru.

Classification of mining pre-strip as pre-production capital or operating costs is an accounting treatment rather than cash treatment but with the Rio Alto development plan being to start with the dump leach and given the low waste to ore ratio the only pre-production stripping allowed as capital has been a nominal $4.0M for the dump leach and a nominal $4.0M for the mill. Rio Alto accounts for the remainder of waste removal as operating costs.

18.16 Operating Costs

18.16.1 Mining Costs

Mining costs are clearly the largest operating cost.

In the November 2006 PFS "*The operating costs are developed on the basis that mining operations would be performed by La Arena personnel with their own equipment. Maintenance for major and light equipment is also assumed to be performed on site by La Arena personnel. Parts and majority of the supplies will come from the major local dealers".*

In the March 2007 Scoping study owner mining was again assumed as the base case with the main difference being loading by face shovel rather than FEL. The scoping study included a quote from a contractor for the mine life cost of US$1.56 per tonne. This price did not include the IGV (value added tax in Peru) which is recovered during operation. This mining cost represents an increase of 24% when compared with the study owner mining case that did not include fleet ownership costs.

Rio Alto has retained an independent Peruvian consultant SVS Ingenieros S.A.C (SVS) to do a cost analysis for La Arena and their March 2008 report has been reviewed by Coffey. This work was based on first principles for the key mining activities of drill, blast, load, haul, load and haul support or "services" and general and administration costs for mining.

The main difference between owner mining and contract mining is often how the mining fleet ownership cost is treated and that a mining contractor will want to make a profit on this cost and will also have some corporate overheads to recover. In increasing the owner mining costs for contractor's overheads, profit and finance costs SVS have added 15% to the owners cost less G&A and technical support. Coffey agrees with this approach.

Coffey Mining has considered all of the above work and examined productivity and equipment utilisation and each mining activity cost as well as common inputs such as fuel, maintenance and personnel costs. The SVS mining costs in Table 18.16.1_1 are deemed to be reasonable, although at the lower end of what we would expect but within the accuracy of a PFS level study.

Table 18.16.1_1
La Arena Project
Average Mining Operating Costs

Description of Study	Completed By	Date	Owner Mining		Contractor	
			Ore ($/MT)	Wast ($/MT)	Ore ($/MT)	Wast ($/MT)
PFS-calculated	Imagold	Nov 06	1.04			
PFS-optimis'n	Imagold	Nov 06	1.30	1.16		
Scoping	Imagold	Mar 07	1.23	1.23	1.56	
Cost Review	SVS	Mar 08	1.36	1.02	1.49	1.12

The split by mining activity of the SVS contract mining average costs are as shown in Table 18.16.1_2. These costs are based on a current Peruvian fuel cost of US$0.89/litre.

Table 18.16.1_2
La Arena Project
Contract Mining Cost Breakdown

Activity	Ore (US$/t)	Waste (US$/t)
Drilling	0.06	0.06
Blasting	0.13	0.11
Loading	0.12	0.11
Hauling	0.82	0.57
Mining Services	0.17	0.13
G&A and Technical Support	0.06	0.04
Sub Total (owner costs)	1.36	1.02
Contractor's addition	0.13	0.10
Total	**1.49**	**1.12**

Some similar scale operating mines in Peru claim their mining costs are lower than these but until detailed feasibility study work is completed it is prudent to base costs on first principles work done to date.

18.16.2 Dump Leach Processing Costs

In the PFS and the Oxide Scoping study the dump leach operating costs were subdivided into three categories; the operation of the leach pads, the gold extraction plant (also known as the ADR, for adsorption, desorption and refining) and the laboratory.

The only real change from the PFS to the Scoping study was to assume site diesel-generated power, at a significantly higher cost of $0.20/kWhr than the $0.05/kWhr used in the PFS and assumed in this report. This had the effect of increasing the PFS processing cost per tonne from $1.27 to $1.67 in the Scoping study.

Manpower costs were assigned to each sector. The laboratory will offer services to the dump leach and also to the mill. A synergy of personnel is possible while both facilities are operating.

All the reagents costs and consumptions were reviewed by Coffey and cyanide usage of 0.25kg/t used in the studies is considered too low, and based on the testwork results a value of 0.50kg/t is considered more realistic, refer Section 16.5. The unit cost of cyanide has also been increased from $1.71/kg to $2.00/kg to reflect current costs.

The cost of bringing the ROM ore to the leach pad is covered in the mine hauling costs and the costs associated with levelling and ripping the dumped ore are included in the processing costs.

All other cost breakdowns and unit rates are considered still appropriate, with sensitivity to power cost already having been shown in the Scoping study.

Coffey also believe the unit cost of expanding the leach pad (and any associated increases to other infrastructure such as extra pond capacity) from the initial phase 1 pad capital cost should be treated as an operating cost, at least for determining mineral reserves and cutoff grades for operations. This is simply because if the mineral reserves increase, such as with further exploration success or a significant increase in gold price, the pad must be expanded proportionally. The PFS estimates an expansion cost of $20.43/m^2 of pad area with an average of 45t/m^2 for the PFS design. This equates to $0.45/t of ore additional cost and this cost was added to the operating processing cost for the revised pit optimisation/mineral reserve estimation process as per Section 17.2.2. In the cashflow model all pad construction and expansion costs have been treated as capital costs.

The processing operating cost summary is shown in Table 18.16.2_1.

Table 18.16.2_1
La Arena Project
Dump Leach Processing Cost

Activity	**PFS (US$/t)**	**43-101 (US$/t)**
Pad Operation	0.80	1.30
ADR	0.29	0.29
Laboratory	0.18	0.18
Total	**1.27**	**1.77**

18.16.3 Sulphide Milling and Flotation Processing Costs

The detailed breakdown of operating costs for milling and flotation in the PFS are considered reasonable and are supported by consumption rates and unit costs, with the exception of two variations to the PFS estimate. The original design criteria included a total power consumption of 17.2kWhr/t which is considered low and 20kWhr/t has been used in the updated estimate. The unit power cost of $0.05/kWhr has not been changed.

Also the original maintenance and supplies component was considered inadequate, and has been adjusted using an industry standard practice of applying a fixed percentage (2.75%) of total installed costs. (The installed capital cost used was $168M and included electrical and communications, infrastructure, mill, water management, relevant indirect costs and a contingency of 20% on this sub total to allow for cost escalation since the PFS and unaccounted for items).

The summary of the sulphide milling and flotation costs are shown in Table 18.16.3_1.

Table 18.16.3_1
La Arena Project
Sulphide Milling and Flotation Processing Cost

Activity		PFS (US$/t)	43-101 (US$/t)
Crushing		0.09	0.09
Grinding		0.09	0.09
	Grinding media	0.41	0.41
	Stove Oil	0.19	0.19
Flotation		0.08	0.08
Thickening & Tails		0.21	0.21
Maintenance & Supplies		0.20	0.55
Reagents	CYTEC Aero 5100	0.23	0.23
	Stove Oil	0.01	0.01
	Pine Oil	0.01	0.01
	M.I.B.C.	0.03	0.03
	Lime	0.11	0.11
Power		0.86	1.00
Labour		0.27	0.27
Freight		0.23	0.23
Total		**3.02**	**3.73**

18.16.4 Copper Concentrate Costs

Copper producers sell their concentrate production under long term "frame" off-take agreements which are contracted directly with copper smelters. The spot cargos that may be left over for selling in the spot market are usually sold to merchants that trade in concentrates.

Frame contracts with smelters for copper concentrates of the quality to be produced at La Arena typically include the following conditions:

<u>Material</u>

Description of the quality of the concentrate.

<u>Quantity</u>

Annual quantity in dry metric tons (DMT).

Shipment

A monthly or quarterly schedule of shipments is agreed upon each year during negotiation of annual Treatment and Refining Charges.

Delivery:

Typically Cost, Insurance and Freight - Free Out discharge conditions CIF-FO (the seller pays for ocean freight and insurance, the buyer pays for the unloading of the cargo).

Prices:

- Copper: The daily LME Grade "A" Copper Cash Settlement averaged over the monthly quotational period.
- Gold: The daily London Spot Gold Quotation in US$ averaged over the monthly quotational period.
- Silver: The daily London Spot Silver Quotation in US$ averaged over the monthly quotational period

Commercial Deductions:

- Copper: 3.5% (96.5% is payable)
- Gold: for up to 1 gram per DMT there is no payment, between 1 and 3 grams per DMT the payment is for 90% of the gold; between 3 and 5 grams per DMT 93% is payable; between 5 and 7 grams per DMT 95% is payable and between 7 and 10 grams per DMT 96.5% is payable.
- Silver: for more than 30 grams per DMT the payment is 90%.

Quotational Period

The quotational period is agreed upon each year during negotiation of annual Treatment and Refining Charges but on average it corresponds to the second calendar month after the month of arrival (2MAMA).

Treatment Charge (TC)

In US$ per dry metric of copper concentrate received – set annually.

Refining Charge (RC)

In US cents per pound of payable copper – set annually.

In the case of gold and silver a refining charge is set in the frame contract between the parties and is typically about US$6 per payable ounce of gold and $0.40 per ounce of silver.

Penalties

Penalties are assessed in $ per DMT and will vary depending on the capability of particular smelters – a penalty schedule may be set in the frame contact between the parties and may be subject to negotiation at a later stage depending on the market developments. Penalties apply for excessive amounts of metals such as Arsenic, Antimony, Lead, Zinc, Mercury, Bismuth and Selenium. The La Arena concentrate is not expected to incur any penalties.

Other

Weighing, Sampling and Moisture Determination is normally performed at the destination port and most often is supervised by an independent umpire.

Producers and smelters with frame contracts meet each year to negotiate annual TC's and RC's and other major contract terms.

Price Participation

A possible variation to the Refining Charge (RC) is the Price Participation (PP) clause. This clause is often required by smelters in frame contracts. Under a PP clause, the agreed upon RC has a basis price. When the price of copper to be paid is determined, this price is compared with the RC basis price. If the price to be paid by the smelter is above the basis price, a PP adjustment is awarded to the smelter though an increase in the RC. If the price to be paid by the smelter is below the basis price, a PP adjustment is awarded to the producer by a decrease in the RC. In 2005 PP awards of US 3 cents were generally instituted. At times tightness in the concentrate markets has enabled some important producers to eliminate PP adjustments.

Projected longer-term equilibrium levels for TC, RC and PP

Rio Alto's long term copper price forecast (2015 and beyond) is $4,400/t (US$2.00 per lb) and a TC/RC level of 80/8.0 with no PP, which on a 30% Cu grade concentrate is equivalent to a charge of 20.53 US cents per lb of payable copper.

A charge of 20.5 US cents equates to 10.3% of the projected copper price of $2.00 per lb. Inherent in the projection is the expectation of a more competitive market for copper concentrates. During the period 1995 to 1H 2007 the T/C R/C charges appear to have averaged 19.85 US cents per lb of payable copper contained in 30% cu grade concentrate which is 16% of what the copper price average was for that period ($1.24 per lb).

For export sales a TC/RC level of 80/8.0 with no PP CIF FO Main Chinese Port is equivalent to 21.4 US cents per lb of payable copper on La Arena (28.0% Cu grade at 96.5% payable) concentrate ($472/t of payable copper, or $128 per DMT of concentrate).

Ocean Freight

Copper concentrates will be loaded at the port of Salaverry. The port of Salaverry is a multi-purpose port with a maximum depth of 10m (31 feet) and has concentrate storage and loading facilities. The port is well protected from ocean swells by the natural setting and artificial breakwaters. The port is only known to close in case of heavy fog which is sometimes present for a few hours in the morning during summertime. Salaverry can accommodate Handymax size bulk carriers which can be loaded with up to 32,000 WMT of concentrate.

In the case of La Arena, concentrate production will average approximately 115,000 WMT per year for 17 years. During 2008 the Cerro Corona mine is expected to start exporting copper/gold concentrate from Salaverry to Asia and Western Europe. In all likelihood Rio Alto will be selling to the same smelters as Goldfields so there may be synergies in negotiating a common ocean freight rate with shipping companies. La Arena will ship approximately two 5,000 WMT parcels per month, one to Western Europe and one to Asia. This will require 2 bulk carriers per month with a load capacity of 32,000 WMT. These loads will be transported by Handymax (45,000 DWT) bulk carriers. Existing warehouse capacity at Salaverry is able to accommodate up to 50,000 WMT of concentrates.

Ocean freight will vary depending on market conditions and parcel sizes. The recent increase in freight rates has been fuelled by China's and India's rapid industrialization, heavy congestion at export terminals in the Pacific and robust global economic growth creating an increase in sea trade volume. Additionally, the increase in the price of bunker oil is a cause of rising ocean freight rates.

Market observers believe that the recent high cost of bulk carriers will last through 2008 and only in 2009 will the market begin to return to historically normal cost with the arrival of new fleets. If the bunker oil price remains unchanged, 2009 spot ocean freight rates between Peru and Main Asian ports should be $82 per WMT (based on a recent Baltic Exchange quote of $26,250/day for calendar 2009) for Handymax class vessels. The current market provides an incentive for shipbuilders and expectations are that in 2010 there will be an adequate supply of bulk carriers in the market which will bring the Handymax rate down to $16,000/day equating to $50 per WMT rate for concentrates.

For the purpose of long term projections Rio Alto is using an ocean freight rate of $50 per WMT of concentrate or $54 per DMT.

Land Transport from La Arena to Salaverry

A neighbouring concentrate producer provided Rio Alto with its land transport rate of $15.00 per wet metric ton of concentrate (WMT), equivalent to $16.20 per DMT, and advised that the same rate would be available for the foreseeable future.

Storage and vessel loading at Salaverry Concentrates Warehouse

A rate of $8.20 per WMT to cover: storage at Salaverry warehouse, inland transfer from warehouse to pier, loading charges and customs agent fees has been provided to Rio Alto by a neighbouring mine. There is an additional cost of $2.00 per WMT to cover port charges. The total is $10.20 per WMT equivalent to $11.02 per DMT

Handling Losses

Handling losses are typically 0.20% of a DMT at each transfer point. Concentrates sold will be handled twice in Salaverry (storage warehouse and loading pier). Based on a copper price of $4,400 per MT the CIF FO Main Japanese Port value of the La Arena concentrate is $1,238 per DMT. Two transfer points x 0.20% x $1,238 = $4.95 per DMT. Rio Alto has provided an allowance of $5.66 per DMT of concentrate for handling losses.

Marine Insurance

Domestic transfer of production will be covered by Rio Alto's general insurance policy. Ocean transfers must be covered by marine insurance. A typical marine insurance rate is 0.10% of the concentrate CIF Value $1,238 per DMT, therefore $1.24 per DMT.

Supervision of Weighing, Sampling, Moisture Determination and Assaying

Typically these services are performed at the port of discharge and their cost is for the account of the buyer (smelter). The copper producer has the right to be represented by a supervising company during these procedures at its own cost. The cost for assaying one sample of concentrate for Cu and Ag is about $100 for each 500 DMT or $2,000 per 10,000 DMT. This results in a total cost for a 5,000 DMT lot of about $1,750 which is equivalent to $0.35 per DMT. Rio Alto has a combined allowance for marine insurance and supervision of weighting, sampling, moisture determination and assaying of $1.73 per DMT of concentrate.

Summary

From above the concentrate costs are summarised in Table 18.16.4_1.

Table 18.16.4_1
La Arena Project
Concentrate Costs

Activity	PFS (US$/DMT concentrate)	43-101 (US$/DMT concentrate)
Road haulage of concentrate	24.19	16.20
Salaverry port costs	5.91	11.02
Ocean Freight	51.08	54.00
Insurance, supervision	1.73	1.73
Smelter cost (TC)	95.00	80.00
Handling losses, Other costs	0.25% + 8.50	5.66
Refining - copper	0.095 / lb Cu	0.08 / lb Cu
- gold	6.00 / oz	6.00 / oz
Marketing	1% NSR value	Nil, in-house

18.16.5 General and Administration Costs

The PFS includes: "*The General and Administration (G & A) Division will provide the key support services to the operating divisions. The majority of those services will be provided by La Arena's own personnel as direct services and include such areas as general supervision and management, human resources, health and safety, security, purchasing, data processing, social aspects and accounting.*

The G & A Division for the mine and mill operations will be centralized at the La Arena mine site. A small office will be located in Salaverry to offer a better control on concentrate shipments and also to support the operation for logistic and procurement. This office will also provide close coordination with suppliers, freight carriers and will also be under the responsibility of the G & A Division.

Total G & A operating cost was estimated at $0.91 per tonne of ore processed or approximately $US10M per year."

The PFS splits costs by Administration department and then by manpower, supplies, etc. The Management – Office department includes all site-wide costs such as insurance, camp, communications, freight, legal and general maintenance. The four biggest costs items are for insurance (21%), manpower (18%), food at the camp site (16%) and communications (6%). The summary of costs by department for an average full production year is shown in Table 18.16.5_1.

Table 18.16.5_1
La Arena Project
PFS G & A Cost Breakdown

Department	Ave annual costs (US$M)
Management – Office	6.95
Human Resources	0.41
Health and Safety	0.61
Security	0.50
Purchasing	0.24
Data Processing	0.22
Social	0.24
Accounting	0.57
Salaverry	0.12
Total	**9.86**

Rio Alto has reduced the G&A costs due to:

- Contract mining costs include some G&A previously assumed as part of administrating owner mining.
- The plan to only have a small camp at site.
- Expectation of lower insurance costs, based on research.
- Mining and treating the dump leach ore over a four year period rather than over eight and a half years.

Rio has assumed G&A costs of $3.5M/a for dump leach only, $9.7M/a for dump leach plus milling and $6.6M/a for milling only, which seems reasonable at this stage of study and has been supported by examples from Rio Alto.

18.17 Project Economics

The PFS included cashflow estimates and financial analysis based on the operating costs and capital expenditures presented in the PFS. Estimated costs were in United States dollars as of the fourth quarter of 2006. The evaluation was conducted on the basis of a stand alone project, 100% equity financing. The standard discounted cashflow method to determine the net present value (NPV) and internal rates of return (IRR) were used to determine the economic viability of the project.

Rio Alto has constructed a financial model on a similar basis and this has been checked by Coffey Mining.

18.17.1 Cashflow Modelling

Rio Alto's comprehensive model does have a number of simplifications, including average tonnes mined of ore and waste for each year at average grades; average mining, processing and administration costs for all years; gold revenue from the dump leach being produced without any time delay and constant metallurgical recoveries but for this level of project status this is appropriate.

The key assumptions used include:

<u>Revenue</u>

- Copper at $2.00/lb.
- Gold at $750/oz.
- Silver at $12/oz, based on 30% of dump leach doré weight
- No revenue allowed for molybdenum.

<u>Financing</u>

100% equity assumed

<u>Taxes</u>

- 80% of Capex subject to IGV (VAT), refunded in following year
- Worker's participation tax 8% of pre-income tax income
- Income tax rate 30%
- Peru government royalty varies from 1% to 3% of revenue net of allowed deductions

Physicals – Production Basis

- Dump leach feed of 30.2Mt @ 0.61g/t Au
- Mill feed of 144.2Mt @ 0.40% Cu and 0.30g/t Au
- Dump leach mining and processing rate 8.64Mtpa from September 2010
- Dump leach waste mining constant 12.2Mtpa
- Mill feed rate of 8.4Mtpa, from January 2012
- Mill waste mining rate constant 6.9Mtpa
- Dump leach metallurgical recovery of 65% Au
- Metallurgical copper recovery of 88% Cu and 40% Au to concentrate
- Gold produced 942koz
- Copper produced 1,079.9Mlb

Capital Costs

- Total capital cost of $268M
- Includes EPCM costs of mill and related infrastructure of 10% and overall 15% contingency

Operating Costs

- Dump leach and mill ore mining cost $1.49/t
- Waste mining cost $1.12/t
- Dump leach processing cost $1.77/t
- Mill processing cost $3.73/t
- G&A cost of $3.5M/a for dump leach only, $9.7M/a for both dump and mill, $6.6M/a for mill only

The primary results from the financial model are:

Cashflow (after tax)

- Maximum negative cumulative cashflow during mill construction in 2011 of approximately $160M
- Cumulative cashflow positive from 2015
- Total net cashflow of $645M in year 2028

Financial Results

- After tax internal rate of return (based on 100% equity) 25%
- Net present value (NPV) of $195M at a discount rate of 8%
- Payback period, from start of mill, of 37 months
- Cash cost gold (dump leach only) $428/oz
- Cash cost copper (including gold credits) $0.85/lb

The annual cashflow is summarised in Table 18.17.1_1. Cash in is defined as revenue less government royalty. Cash out is capital and operating costs. Tax includes worker participation and income tax.

Table 18.17.1_1
La Arena Project
Cashflow by Year

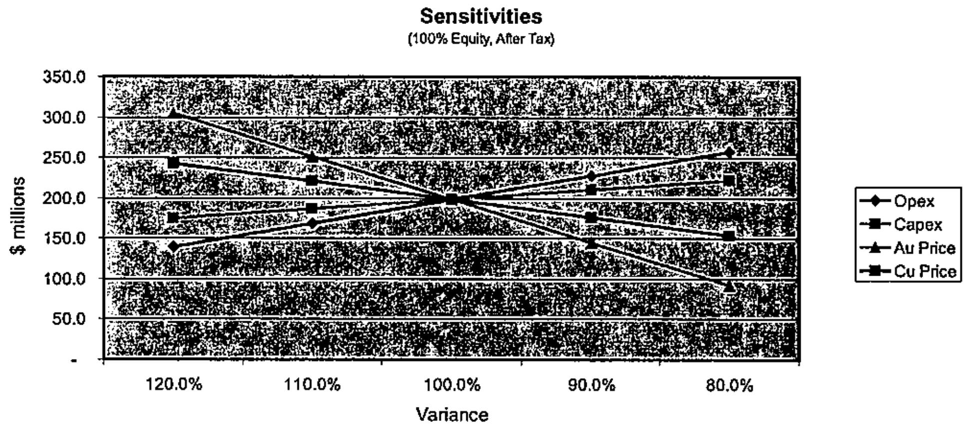
Year	Production		Revenue ($M)		Cash Out ($M)	Cash Costs ($)		Tax ($M)	After-Tax Cashflow ($M)
	Au (koz)	Cu (Mlbs)	Au	Cu		Per oz	Per lb		
2008					7.6				(7.6)
2009					45.8				(45.8)
2010	36.7		27.5		13.6	329			13.7
2011	110.1		82.5		201.4	438			(120.0)
2012	142.5	62.9	106.6	120.8	177.6	438	0.79	19.7	25.5
2013	142.5	62.9	106.6	120.8	128.3	438	0.86	15.3	79.3
2014	50.6	62.9	37.7	120.8	91.2	438	0.86	14.7	50.2
2015	32.4	62.9	24.1	120.8	80.0		0.86	14.3	48.5
2016	32.4	62.9	24.1	120.8	81.9		0.86	15.5	45.5
2017	32.4	62.9	24.1	120.8	79.4		0.86	17.3	46.1
2018	32.4	62.9	24.1	120.8	79.8		0.86	17.6	45.5
2019	32.4	62.9	24.1	120.8	79.8		0.86	17.9	45.2
2020	32.4	62.9	24.1	120.8	79.8		0.86	17.8	45.3
2021	32.4	62.9	24.1	120.8	79.6		0.86	17.8	45.4
2022	32.4	62.9	24.1	120.8	79.7		0.86	17.8	45.4
2023	32.4	62.9	24.1	120.8	79.7		0.86	17.8	45.4
2024	32.4	62.9	24.1	120.8	79.7		0.86	17.8	45.4
2025	32.4	62.9	24.1	120.8	81.4		0.86	17.6	43.8
2026	32.4	62.9	24.1	120.8	82.9		0.86	17.3	42.7
2027	32.4	62.9	24.1	120.8	83.6		0.86	16.8	42.4
2028	37.9	73.5	28.2	141.1	82.4		0.86	21.2	63.0
Total	**941.7**	**1,079.9**	**$702.7**	**$2,073.5**	**$1,795.1**	**$428**	**$0.85**	**$294.3**	**$645.1**

Note: Totals may not add due to rounding.
Gold cash cost per ounce is for dump leach gold only, copper cash cost per pound includes gold credits.

18.17.2 Sensitivity Analysis

The sensitivity to copper and gold price and capital and operating costs is shown in Figure 18.17.2_1.

Figure 18.17.2_1
Sensitivity Chart



An alternative sensitivity analysis is to show the key variables within a reasonably expected range, as shown in Table 18.17.2_1. A simple addition of each optimistic and pessimistic cashflow effect column gives an indication of the likely best and worst case scenarios.

Table 18.17.2_1
La Arena Project
Sensitivity Range Table

Parameter	Estimated Life-of-Mine Benefit (Cost)				
	Optimistic		Base Case	Pessimistic	
	% Change	Cashflow Differential |$M		% Change	Cashflow Differential $M
Revenue					
Copper price	25 ($2.50)	337	$2.00/lb	10 ($1.80)	(135)
Gold Price	20 ($900)	84	$750/oz	13 ($650)	(56)
Gold Grade – dump leach	5	8	0.61g/t Au	10	(16)
Copper grade – mill	5	55	0.4% Cu	5	(55)
Metallurgical recovery – dump leach	5	8	65%	10	(16)
Copper recovery – mill	2	22	88%	3	(33)
Gold recovery – mill	50	129	40%	5	(13)
Costs					
Mining Operating Cost (average)	5	14	1.27	10	(28)
Processing Operating Cost – dump leach	5	2	1.77	10	(4)
Processing Operating Cost – mill	5	17	3.73	10	(34)
Concentrate Costs	10	18	168.61/DMT	20	(36)
G&A Costs (milling only)	5	6	$6.6M/a	15	(17)
Capital Costs	5	13	$268M	15	(40)
Total	Best Case	+713	$645M cashflow	Worst Case	(483)

18.18 Proposed Project Development Schedule

The lamgold PFS project development schedule extends over a period of 34 months from the start of the feasibility study to the Dump Leach facility start-up with the mill start-up a further 10 months later.

The PFS expected that a period of 12 months will be required to complete all the studies and analysis needed for the feasibility study. During the same period, the environmental impact assessment study (EIA) will be completed and submitted for approval. This process will take 14 months after which an additional 6 months will be required before the operating permits are delivered.

Rio Alto has started development of a detailed plan of all work required to be done as part of further drilling, metallurgical and other testwork, studies into all aspects of the project plus the detailed plan for the EIA that will need to occur. Getting the study and project team together and deciding on what will be out-sourced will be part of this planning session. It is recognised by Rio Alto that consulting and engineering companies in Peru and elsewhere are all currently in demand and therefore Rio Alto has sourced a number of key technical and administrative personnel.

There are also a number of project areas that are not yet to PFS level and these should be examined to see if any are on the project critical path before appointing any engineering group to begin detailed design and engineering work. These areas are those recommended in Section 20 for further work, such as selected geological and geotechnical drilling to define pit limits, water studies for pit dewatering and total site water balance, additional dump leach metallurgical testwork, tailings characterisation and more on tailings storage design and discussion with providers of electrical power.

B&G Engineering has stated that the shortest estimated time for the full development of the regulatory process is two years.

Rio Alto are scheduling first ore to the dump leach in September 2010 and commissioning of the mill in January 2012 or 15 months after the start of the dump leach.

19 INTERPRETATION AND CONCLUSIONS

The pertinent observations and interpretations which have been developed in producing this report are detailed in the sections above.

From the work completed to date on the La Arena Project the project overall is deemed by Coffey Mining to be at pre-feasibility level, as defined by NI43-101, and is reasonably robust technically, socially and environmentally and makes a reasonable return on expected funds to be expended.

20 RECOMMENDATIONS

The November PFS included a list of items under recommended work and the relevant items have been included below along with additional recommendations made by Coffey Mining.

A detailed analysis of what is required to be completed in the next stage of feasibility study has yet to be completed and it is recommended this be done as soon as time and funds permit. There are a number of project areas that are not yet to PFS level and these should be examined to see if any are on the project critical path before appointing any engineering group to begin detailed design and engineering work on the sulphide part of the Project.

20.1 Geology and Resources

The majority of the estimated resources are in the Indicated category. The drillhole spacing is largely 50m to 65m and a degree of uncertainty remains about the local geological and grade continuity. Infill drilling is required before progressing to definitive feasibility studies and mining. The deeper and peripheral areas are sparsely drilled and require infill drilling if they have potential to be converted to Reserves. Targeted infill drilling, locally to a regular spacing on 25-30m sections is recommended.

Condemnation drilling of all the infrastructure areas also needs to be done.

Consider grade control needs in more detail, including in areas not being blasted as well as areas affected by groundwater.

20.2 Mining

- Geotechnical oriented boreholes are required in the final pit walls. A reassessment of the waste rock properties, walls stability parameters and pit slope angles need to be done.
- A hydrogeological study is required to better determine the likely impact of groundwater on pit wall stability as well as to determine control, pumping and disposal needs for the groundwater.
- Work on optimal bench heights for different areas, including estimates of ore loss and expected dilution
- Based on bench height work plus explosives distribution drill and blast needs to be investigated in detail.
- A full review of the site layout, including the location of waste dumps, tailings storage, infrastructure and all associated haulage and access roads and services is required at an early stage in the feasibility study.
- Do an initial study into the amount of mill ore expected to be re-handled.
- Begin identifying potential mining contracts and obtain expressions of interest based on information in this report.

20.3 Metallurgy

<u>Immediate</u>:

- Dump leach recovery testwork at proposed mine grade.
- Dump leach recovery at predicted dump leach size range.
- Tails characterization and deposition

<u>Going Forward</u>:

- Dump Leach

  Further asses the deleterious affect of the problematic brecciated ore on both recovery and percolation, and define maximum blend and proposed mine grades.

  Determine optimum "dump leach" particle size with respect to pad operation and mine practicalities.

  Review size of ponds as part of water balance work, especially overflow pond.

- Copper Float

  Follow up comminution testwork including JK SAG parameters to aid equipment sizing and selection.

  Further flotation testwork on a blend of primary and secondary ore that is representative of mill feed.

  Further investigate flotation tail cyanidation - possible to increase overall gold recovery by ~30%.

  Further investigate reagent selection and optimisation with respect to copper and gold recovery.

  Complete ancillary testwork such as filtration, settling etc.

  Investigate molybdenum extraction/recovery and cost viability.

20.4 Infrastructure

- Start negotiations with electrical generators and transport suppliers.
- Geotechnical drilling for buildings & infrastructure needs to be done.
- Characterize top soil/clay material for construction and reclamation purposes. (Precise quantity and quality).
- Stockpiling location close by will need to be identified.
- Complete the investigation and study regarding concentrate transportation, storage and possible infrastructure required at port facility.
- The tailings storage option presented in the PFS documentation is adequate for use as a 'base' option in future studies. As part of future studies, review of the tailings storage location options, capacities, PAF work, and disposal options is required.

20.5 Social

- Complete relocation plan.
- Complete negotiations and proceed with purchasing the land required for the project.

20.6 Environmental

- Complete the piezometers installation and conduct hydrology study of the area.
- Complete water balance calculations within final footprint and specifications for the project.
- Complete environmental sampling campaign on the final footprint (extension on the north sector to the village of Raumate).
- Conduct kinetic tests on waste material.
- Conduct impact study of the new power line.

20.7 Estimated Costs of Recommendations

Effectively all these costs have been allowed for in the Iamgold and Rio Alto build-up of the Feasibility Study cost of $8M, as included in Section 18.15 and as reviewed by Coffey Mining and deemed reasonable.

The summary of the costs related to these recommendations is included in Table 20.7_1 and the balance of the $8M for the feasibility work is to cover all other study work. The $2.1M balance will cover costs of finalising mine design, scheduling and mining costs; the remainder of metallurgical and TSF work; completing site engineering work; pulling the whole Feasibility Study together and costs of obtaining permits.

Table 20.7_1
La Arena Project
Cost of Recommendations

Area	Estimated Costs (US$M)
Geology and Resources (mostly drilling)	1.5
Mining (includes pit geotechnical work)	0.4
Metallurgy	0.3
Infrastructure (includes work on TSF)	0.4
Social (mostly land acquisition)	3.0
Environmental	0.3
Total	**5.9**

The work described in this section is effectively one phase, with much of the work being done in parallel and the results of this work expected to lead to refinements in detail and cost estimates rather than requiring any fundamental Project decision points. In the opinion of all three qualified persons the Project has sufficient merit to justify this work program.

21 REFERENCES

"A Review of the La Arena Porphyry Model, Peru", S.J. Meldrum, February 2005

"Comments On The Terra Amarilla, El Toro And La Arena Projects In The Huamachuco District, Peru, Corbett Geological Services, November 2004.

"Exploring Possibilities For Tailings Disposal In The Quebrada Saya Pamba Valley La arena project, Peru", Golder Associates, September 2006.

"Iamgold Fourth Quarter Activity Report – January 2007", Iamgold Corporation, January 2007.

"La Arena Project, Peru – Pre-feasibility Study", Iamgold Corporation, November 2006.

"La Arena Project, Peru – Scoping Study (Oxide Option)", Iamgold Corporation, March 2007.

"La Arena Tailings Disposal Options Study", Golder Associates, August 2006.

"Leach Pad And Ponds Pre-Feasibility Study La Arena Project", Vector Peru S.A.C., August 2006

"Mine Operation Cost Analysis Review La Arena Project", SVS Ingenieros S.A.C. March 2008.

"Pit Slope Stability Study", DCR Ingenieros S.R.Ltda, July 2006.

"Revised Preliminary Social & Environmental Due Diligence & Risk Report for the La Arena Project (Rio Alto Mining Limited)", B&G Engineering SAC ,March 2008.

22 DATE AND SIGNATURE PAGE

The effective date of this Report is March 31 2008.

[signed]

J de Visser B.Sc(Hons) Geol. MAusIMM
Director
Resources Perspectives Pty Ltd.

5 August 2008

[signed]

L J Kirk B.E (Min), FAusIMM
Chief Mining Engineer
Coffey Mining Pty Ltd

5 August 2008

[signed]

Chris Witt BSc (Chemistry) MAusIMM
Senior Consultant - Metallurgy
Coffey Mining Pty Ltd

5 August 2008

23 CERTIFICATES OF AUTHORS

Certificate of Qualified Person

La Arena Project, Peru, Technical Report, March 31 2008, Rio Alto Mining Limited and Mexican Silver Mines Limited

1. I, Jan de Visser, a Director of Resource Perspectives Pty Ltd, 80 Falls Road, Lesmurdie, Western Australia, Australia and previously Manager Resources, West Perth for Coffey Mining Pty Ltd, Australia, do hereby certify that:
2. I am a member of the AusIMM (Australasian Institute of Mining and Metallurgy), and a 'Qualified Person' in relation to the subject matter of this report on the La Arena Project (Report).
3. I graduated from the University of Utrecht, The Netherlands with an M.Sc. Degree in Geology (1984) and a Ph.D. in Geology (1991). I have practiced my profession continuously since 1988.
4. I am a "qualified person" as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the "Instrument").
5. I visited the property that is the subject of this Report on November 5 and 6, 2007.
6. I am responsible for Sections 6-15 and 17.1 of this report.
7. I am co responsible for Sections 1, 2 and 19-21 of this report.
8. I hereby consent to the use of this Report and my name in the preparation of documents for a public filing including a prospectus, an annual information filing,, brokered or non-brokered financing(s), or for the submission to any Provincial or Federal regulatory authority.
9. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, or the omission to disclose which makes the Report misleading and that as of the date of this certificate, to the best of my knowledge, information and belief, the Report contains all scientific and technical information that is required to be disclosed to make the Report not misleading.
10. I have read and understand National Instrument 43-101 and am independent of the issuer as defined in Section 1.4 and prior to visiting La Arena I had no involvement in or knowledge of the property that is the subject of this Report.
11. I have read the National Instrument and Form 43-101F1 (the "Form") and the Report has been prepared in compliance with the Instrument and the Form.
12. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Property that is the subject of this report and do not hold nor expect to receive securities of Rio Alto Mining Limited or Mexican Silver Mines Limited.

Dated at Perth, Western Australia, Australia, on 5 August, 2008.

[signed]

J de Visser PhD M.Sc(Hons) Geol. MAusIMM
Director
Resource Perspectives Pty Ltd

Certificate of Qualified Person

La Arena Project, Peru, Technical Report, March 31 2008, Rio Alto Mining Limited and Mexican Silver Mines Limited

1. I, Linton J Kirk, Employee and Chief Mining Engineer of Coffey Mining Pty Ltd, 1162 Hay Street, West Perth, Western Australia, Australia, do hereby certify that:-
2. I am a fellow of the AusIMM (Australasian Institute of Mining and Metallurgy), and a 'Qualified Person' in relation to the subject matter of this report. .
3. I graduated from the University of Melbourne, Melbourne, Australia with a B.E (Min) Degree in 1976. I have practiced my profession continuously since 1976.
4. I am a "qualified person" as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the "Instrument").
5. I visited the property that is the subject of this Report in November 2007.
6. I am responsible for Sections 4, 5, 17.2 and 18, except 18.6, of this report.
7. I am co responsible for Sections 1-3 and 19-21 of this report.
8. I hereby consent to the use of my name in the preparation of documents for a prospectus, annual information filing, initial public offering, brokered or non-brokered financing(s), for the submission to any Provincial or Federal regulatory authority.
9. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, or the omission to disclose which makes the Report misleading.
10. I have read and understand National Instrument 43-101 and am considered independent of the issuer as defined in Section 1.4.
11. I have read the National Instrument and Form 43-101F1 (the "Form") and the Report has been prepared in compliance with the Instrument and the Form.
12. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Property that is the subject of this report and do not hold nor expect to receive securities of Rio Alto Mining Limited or Mexican Silver Mines Limited.

Dated at Perth, Western Australia, Australia, on 5 August, 2008.

[signed]

L J Kirk B.E (Min), FAusIMM
Chief Mining Engineer
Coffey Mining Pty Ltd

Certificate of Qualified Person

La Arena Project, Peru, Technical Report, March 31 2008, Rio Alto Mining Limited and Mexican Silver Mines Limited

1. I, Chris Witt, am a Senior Consultant - Metallurgy with the firm Coffey Mining Pty Ltd, 1162 Hay Street, West Perth, Western Australia, Australia, do hereby certify that:-
2. I am a practising metallurgist and I am a Member of AusIMM (Australasian Institute of Mining and Metallurgy),.
3. I am a graduate of James Cook University and Western Australian School of Mines and hold a Bachelor of Science (Chemistry) degree 1995 and Post Graduate Diploma In Metallurgy 1998. I have practiced my profession continuously since 1996.
4. I am a "qualified person" as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the "Instrument").
5. I have not visited the property that is the subject of this Report.
6. I prepared Section 16 and 18.6 of the Study.
7. I am co responsible for Sections 1, 2, 18.16 and 19-21 of this report.
8. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, or the omission to disclose which makes the Report misleading.
9. I have read and understand National Instrument 43-101 and am considered independent of the issuer as defined in Section 1.4.
10. I have read the National Instrument and Form 43-101F1 (the "Form") and the Study has been prepared in compliance with the Instrument and the Form.
11. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Properties that are the subject of this report and do not hold nor expect to receive securities of Rio Alto Mining Limited or Mexican Silver Mines Limited.

Dated at Perth, Western Australia, Australia, on 5 August, 2008.

[signed]

Chris Witt BSc (Chemistry) MAusIMM
Senior Consultant - Metallurgy
Coffey Mining Pty Ltd