BEHRE DOLBEAR
founded 1911 MINERALS INDUSTRY ADVISORS
BEHRE DOLBEAR ASIA, INC.
999 Eighteenth Street, Suite 1500 Denver, Colorado 80202 3030-620-0020 fax 303-620-0024
BEIJING CHICAGO DENVER GUADALAJARA HONG KONG LONDON NEW YORK
SANTIAGO SYDNEY TORONTO ULAANBAATAR VANCOUVER
www.dolbear.com

June 28, 2012

The Directors
Wanguo International Mining Group Limited

and

The Directors
Guotai Junan Capital Limited
27/F, Low Block, Grand Millennium Plaza
181 Queen's Road Central
Hong Kong

Gentlemen,

Behre Dolbear Asia, Inc. ("BDASIA"), a member of the Behre Dolbear Group ("Behre Dolbear") of companies, herewith submits a report on the Independent Technical Review of the Xinzhuang Copper, Lead, Zinc Mine (the "Xinzhuang Mine") in Yifeng County, Jiangxi Province, the People's Republic of China ("China" or the "PRC"). The address for BDASIA is noted above. This letter of transmittal is part of the report.

The Xinzhuang Mine is currently owned and operated by Jiangxi Province Yifeng Wanguo Mining Company Limited ("Yifeng Wanguo"), which is a wholly-owned subsidiary of Wanguo International Mining Group Limited (the "Company"). The Xinzhuang Mine constitutes the primary mining asset of the Company. BDASIA's project team visited the Xinzhuang Mine in April 2010, January 2011 and January 2012.

The purpose of this report is to provide an independent technical assessment of the Company's Xinzhuang Mine to be included in the prospectus for the Company's initial public offering ("IPO") on the main board of The Stock Exchange of Hong Kong Limited ("SEHK"). This technical report has been prepared in accordance with the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the "Listing Rules"), in particular, Chapter 18. The reporting standard adopted by this report is the VALMIN Code and Guidelines for Technical Assessment and Valuation of Mineral Assets and Mineral Securities for Independent Expert Reports as adopted by the Australasian Institute of Mining and Metallurgy in 1995 and updated in 2005. Mineral resources and ore reserves defined at the property have been reviewed for conformity with the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves (the "JORC Code") prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia in December 2004.

The evidence upon which the estimated mineral resources and ore reserves are based includes the deposit geology, drilling and sampling information, project economics and historical production data. The basis upon which BDASIA forms its view of the mineral resource and ore reserve estimates includes the site visits of BDASIA's professionals to the subject mining properties, interviews with Yifeng Wanguo's management, site personnel and outside consultants, and analysis of the drilling and sampling database and the procedures and parameters used for the estimates.

The BDASIA project team consisted of senior-level mining professionals from Behre Dolbear's Denver office in the United States, the Sydney office in Australia, and the London office in the United Kingdom. The scope of work conducted by BDASIA included site visits to the reviewed mining property, technical analysis of the project geology, mineral resource and ore reserve estimates, and review of mining, processing, production, operating and capital costs, environmental and social management, and occupational health and safety issues.

BDASIA has not undertaken an audit of Yifeng Wanguo's data, re-estimated the mineral resources, or reviewed the tenement status with respect to any legal or statutory issues.

BDASIA's report comprises an Introduction, followed by reviews of the technical aspects of Geology, Mineral Resources and Ore Reserves, Mining, Processing, Production, Operating and Capital Costs, Environmental and Social Management, and Occupational Health and Safety issues, as well as a Risk Analysis of the Xinzhuang Mine. BDASIA trusts that the report adequately and appropriately describes the technical aspects of the project and addresses issues of significance and risk.

BDASIA is independent of the Company, Yifeng Wanguo and the Xinzhuang Mine. Neither BDASIA nor any of its employees or associates involved in this project holds any share or has any direct or indirect pecuniary or contingent interests of any kind in the Company, Yifeng Wanguo, or the Xinzhuang Mine. BDASIA is to receive a fee for its services (the work product of which includes this report) at its normal commercial rate and customary payment schedules. The payment of BDASIA's professional fee is not contingent on the outcome of this report.

The effective date of this BDASIA report is December 31, 2011. The Company has confirmed to BDASIA that no material changes other than the on-going production and mine expansion construction have occurred for the Xinzhuang Mine since the effective date. The sole purpose of this report is for the use of the Directors of the Company and its sponsor and advisors in connection with the Company's IPO prospectus and should not be used or relied upon for any other purpose. Neither the whole nor any part of this report nor any reference thereto may be included in or with or attached to any document or used for any other purpose, without BDASIA's written consent to the form and context in which it appears. BDASIA consents to the inclusion of this report in the Company's IPO prospectus for the purpose of the IPO on the SEHK.

Yours faithfully,
BEHRE DOLBEAR ASIA, INC.

Qingping Deng, Ph.D., CPG
Project Manager

TABLE OF CONTENTS

1.0	INTRODUCTION	V-7
2.0	QUALIFICATIONS OF BEHRE DOLBEAR	V-10
3.0	DISCLAIMER	V-11
4.0	PROPERTY DESCRIPTION	V-11
4.1	Location, Access and Infrastructure	V-11
4.2	Climate and Physiography	V-12
4.3	Property Ownership	V-13
4.4	History	V-13
5.0	GEOLOGY AND DATABASE	V-15
5.1	Geology	V-15
5.1.1	Regional Geology	V-15
5.1.2	Geology of the Xinzhuang Copper-Polymetallic Deposit	V-16
5.1.3	Geology of the Copper-Polymetallic Mineralization	V-20
5.2	Geological Database	V-24
5.2.1	Database Used for the Mineral Resource Estimates	V-24
5.2.2	Drilling, Logging and Survey	V-25
5.2.3	Sampling, Sample Preparation and Assaying	V-26
5.2.4	Quality Control and Quality Assurance	V-27
5.2.5	Bulk Density Measurements	V-27
6.0	MINERAL RESOURCES AND ORE RESERVES	V-27
6.1	Mineral Resource/Ore Reserve Classification System	V-27
6.2	General Procedures and Parameters for the Mineral Resource Estimation	V-29
6.2.1	Determination of "Deposit Industrial Parameters"	V-29

6.2.2 Determination of Block Boundaries and Confidence Levels V-30

6.2.3 Mineral Resource Estimation V-31

6.2.4 The Mined-out Areas V-31

6.2.5 Discussion V-32

6.3 Mineral Resource Statement V-32

6.4 Ore Reserve Estimation V-34

6.5 Ore Reserve Statement V-36

6.6 Mine Life Analysis V-36

7.0 POTENTIAL FOR DEFINING ADDITIONAL MINERAL RESOURCES V-37

8.0 MINING V-37

8.1 Current Mining System V-38

8.2 Geotechnical and Hydrological Issues V-39

8.2.1 Geotechnical Issues V-39

8.2.2 Hydrological Issues V-39

8.3 Planned Mine Expansion V-41

8.4 Mine Production Plan V-43

9.0 METALLURGICAL PROCESSING V-44

9.1 Metallurgical Testing V-44

9.1.1 The Cu-Pb-Zn Ore V-44

9.1.2 The Fe-Cu Ore V-46

9.2 Current Processing Plants V-50

9.2.1 Description of Concentrator No.1 . . . . V-51

9.2.2 Description of Concentrator No.2 . . . . V-52

9.3 Processing Plant Expansion V-53

10.0 PRODUCTION V-54

11.0 OPERATING COSTS V-57

12.0 CAPITAL COSTS V-61

13.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT V-62

13.1 Environmental Management V-62

13.2 Social Management V-65

14.0 OCCUPATIONAL HEALTH AND SAFETY V-65

15.0 RISK ANALYSIS V-65

LIST OF TABLES

Table 5.1 Mineral Resource Database Statistics for the Xinzhuang Copper-Polymetallic Deposit V-25

Table 6.1 Deposit Industrial Parameters for Mineral Resource Estimation V-30

Table 6.2 The Xinzhuang Mine Mineral Resource Summary – December 31, 2011 . . . . V-33

Table 6.3 Measured/Indicated Mineral Resources within the Planned Mining Area – December 31, 2011 . . . . . . V-35

Table 6.4 The Xinzhuang Mine Ore Reserve Summary – December 31, 2011 . . . . . . V-36

Table 8.1 Historical and Forecast Mine Production and Development for the Xinzhuang Mine, 2009-2014 . . . . . . V-38

Table 9.1 Results of Analyses of Potential Economic Elements in the Cu-Pb-Zn Ore Test Sample V-45

Table 9.2 Comparison of Candidate Flowsheets based on Closed Cycle Testing Results V-46

Table 9.3 Results of Analyses of Potential Economic Elements in the Fe-Cu Ore Test Sample V-47

Table 9.4 Comparison of Selective and Bulk Flotation Results V-48

Table 9.5 Results of Closed Cycle Test on Flotation of Copper and Sulfur V-48

Table 9.6 Effect of Magnetic Field Intensity and Feed Grind on Magnetite Separation Results V-49

Table 9.7 Processing Design Parameters and Expected Metallurgical Results V-50

Table 10.1 Historical and Forecast Concentrator Processed Ore for the Xinzhuang Mine, 2009-2014 . . . . V-54

Table 10.2 Historical and Forecast Concentrator Processing Recoveries for the Xinzhuang Mine, 2009-2014 . . . . V-56

Table 10.3 Historical and Forecast Concentrate Production for the Xinzhuang Mine, 2009-2014 . . . . V-56

Table 11.1 Historical and Forecast Operating Costs for the Xinzhuang Mine, 2009-2014 . . . . V-58

Table 11.2 Historical and Forecast Metal in Concentrate Prices used for CuEq Calculation V-60

Table 12.1 Historical and Forecast Capital Costs for the Xinzhuang Mine, 2006-2013 . . V-61

Table 13.1 Tailings Storage Facility for the Xinzhuang Mine V-64

LIST OF FIGURES

Figure 1.1 Location map of the Xinzhuang Mine V-7

Figure 5.1 Subsurface geology map of the Xinzhuang copper-polymetallic deposit V-19

Figure 5.2 Exploration Line 4 section of the Xinzhuang copper-polymetallic deposit . . . V-22

Figure 5.3 Exploration Line 9 section of the Xinzhuang copper-polymetallic deposit . . . V-23

Figure 5.4 Exploration Line 13 section of the Xinzhuang copper-polymetallic deposit . . V-24

Figure 6.1 Schematic mineral resources and their conversion to ore reserves V-28

Figure 9.1 Simplified Processing Flowsheet for Section 1 of Concentrator No.1 . . . . . . V-51

Figure 9.2 Simplified Processing Flowsheet for Section 2 of Concentrator No.1 . . . . . . V-51

Figure 9.3 Simplified Processing Flowsheet for Concentrator No.2 . . . . V-53

1.0 INTRODUCTION

Wanguo International Mining Group Limited (the "Company") is a company incorporated in the Cayman Islands with limited liability. Through its subsidiaries, the company has a 100% interest in Jiangxi Province Yifeng Wanguo Mining Company Limited ("Yifeng Wanguo"), a wholly foreign-owned enterprise registered in Yifeng County, Jiangxi Province of the People's Republic of China ("PRC" or "China"). Yifeng Wanguo owns a 100% interest in the Xinzhuang Copper, Lead, Zinc Mine (the "Xinzhuang Mine") in Yifeng County, Jiangxi Province of China as shown in Figure 1.1.

Figure 1.1 Location map of the Xinzhuang Mine

The Xinzhuang Mine is currently a producing mining operation. The mine uses the underground mining method and flotation and magnetic separation processing methods to produce copper, iron, zinc, and sulfur (pyrite) concentrates from copper-iron, iron-copper, and copper-lead-zinc ores mined from underground stopes.

The Xinzhuang Mine was constructed in the period from 2003 to 2006 with an initial designed production capacity of 200,000 tonnes per annum ("tpa") of ore. Trial production from the mine and the processing plants started in January 2007; commercial production started in August 2007 for the processing plants and the mine. As of December 31, 2011, the production capacity of the mine was expanded to approximately 300,000 tpa for mining and 400,000 tpa for processing. In 2011, the Xinzhuang Mine processed a total of 356,340 tonnes ("t") of ore (including 118,470 t of copper-iron ore with an average copper grade of 1.28%, 154,020 t of iron-copper ore with average grades of 0.52% copper and 35.5% total iron ("TFe"), and 83,850 t of copper-lead-zinc ore with average grades of 0.57% copper, 0.55% lead and 3.63% zinc) and produced 11,066 t of copper concentrate with an average copper grade of 20.97% containing 2,321 t of copper metal, 77,889 t of iron concentrate with an average TFe grade of 61.97% containing 48,268 t of iron metal, 5,746 t of zinc concentrate with an average zinc grade of 47.23% containing 2,714 t of zinc metal, and 64,254 t of sulfur concentrate with an average sulfur grade of 38.9%. In addition, the copper concentrate also contained meaningful amounts of payable gold and silver.

The Xinzhuang Mine plans to expand its ore mining/processing capacity to approximately 600,000 tpa at the end of 2013 and the mine is expected to process a total of 600,000 t of ore (including approximately 150,000 t of copper-iron ore with an average copper grade of 0.76%, 300,000 t of iron-copper ore with an average copper grade of 0.31% and an average TFe grade of 37.7%, and 150,000 t of copper-lead-zinc ore with an average grades of 0.16% copper, 0.87% lead, and 4.59% zinc), and produce approximately 9,140 t of copper concentrate with an average copper grade of 19.9% containing approximately 1,800 t of copper metal, 123,900 t of iron concentrate with an average TFe grade of 63.0% containing approximately 78,100 t of iron metal, 2,120 t of lead concentrate with an average lead grade of 40.0% containing approximately 850 t of lead metal, 11,700 t of zinc concentrate with an average zinc grade of 50.0% containing approximately 5,850 t of zinc metal, and 68,900 t of sulfur concentrate with an average sulfur grade of 41.5% in 2014. In addition, the copper and lead concentrates will also contain meaningful amounts of payable gold and silver.

The Company proposes to prepare a prospectus to be issued in support of an initial public offering ("IPO") for a listing on the main board of The Stock Exchange of Hong Kong Limited ("SEHK") and to raise capital for further project development, expansion and acquisition. Guotai Junan Capital Limited ("Guotai Junan Capital" or the "Sponsor") is the Company's sponsor for the IPO.

The Board of Directors of the Company engaged Behre Dolbear Asia, Inc. ("BDASIA"), a member of the Behre Dolbear Group ("Behre Dolbear") of companies, as their independent technical advisor to undertake an independent technical review of the Company's Xinzhuang Mine and to prepare a competent person's report ("CPR") in connection with the Company's IPO. This BDASIA report is intended to be included in the Company's IPO prospectus.

BDASIA's project team for this technical review consisted of senior-level professionals from Behre Dolbear's offices in Denver, Colorado in the United States, Sydney in Australia, and London in the United Kingdom. Behre Dolbear personnel contributing to the study and to this technical report include:

- **Dr. Qingping Deng (B.S. in exploration geology and M.S. in economic geology from the Central-South Institute of Mining and Metallurgy in China, Ph.D. in economic geology from the University of Texas at El Paso in the United States)**, a senior associate of Behre Dolbear's Denver office, was BDASIA's **Project Manager** and **Project Geologist** for this technical review. Dr. Deng is a geologist with more than 27 years of professional experience in the areas of exploration, deposit modeling and mine planning, estimation of mineral resources and ore reserves, geostatistics, cash-flow analysis, project evaluation/valuation, and feasibility studies in North, Central and South America, Asia, Australia, Europe and Africa. Dr. Deng is a Certified Professional Geologist with the American Institute of Professional Geologists, a Qualified Professional Member of The Mining and Metallurgical Society of America and a Registered Member of The Society of Mining, Metallurgy, and Exploration, Inc. ("SME") and meets all the requirements for "Competent Person" as defined in the 2004 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("the JORC Code") and all the requirements for "Qualified Person" as defined in Canadian National Instrument 43-101. In recent years, he has managed a number of independent technical report studies for filing with SEHK and other securities exchanges. Dr. Deng is fluent in both English and Chinese. He was the president and chairman of the board of directors of BDASIA before June 30, 2010.

- **Mr. Peter Ingham (B.S. in mining from the University of Leeds in England and M.S. in Mineral Production Management in Royal School of Mines, London University in England)**, general manager, mining of Behre Dolbear's Sydney office, was BDASIA's **Project Mining Engineer** for this review. Mr. Ingham has over 30 years of professional experience in the mining industry in Europe, Africa, Australia and Asia. His experience includes operational expertise in operations management, mining contract management, project assessment and acquisition, operational audits and trouble-shooting and tenement and title issues. He is experienced in a range of commodities, primarily copper, gold and platinum, in both surface and underground mining. Mr. Ingham is a Fellow of the Australasian Institute of Mining and Metallurgy.

- **Mr. Vuko Lepetic (B.S. in mining engineering from the University of Belgrade in Yugoslavia and M.S. in mineral engineering from the Columbia University in the United States)**, a senior associate of Behre Dolbear's London office, was BDASIA's **Project Metallurgist**. Mr. Lepetic has over 30 years of worldwide experience in mineral processing and metallurgy. He has worked with and has extensive knowledge of processes employed and products produced by the Company. Mr. Lepetic holds patents for stibnite and cassiterite flotation (both industrially employed) as well as records of invention for the processing of iron, lead and zinc oxide minerals, rare earths and phosphates. He is a Qualified Professional Member (Metallurgy) with the Mining and Metallurgical Society of America.

- **Ms. Janet Epps (B.S. in geology from the University of New England in Australia and M.S. in Environmental Studies from the Macquarie University in Australia)**, a senior associate of Behre Dolbear's Sydney, Australia office, was BDASIA's **Project Environmental and Occupational Health and Safety Specialist**. She has over 30 years of experience in environmental and community issues management, sustainability, policy development and regulatory consultancy services. Ms. Epps has worked extensively with the private sector, government and the United Nations, the World Bank, the IFC and the Multilateral Investment Guarantee Agency ("MIGA"), as well as with the mining industry. She has provided policy advice to governments of developing countries on designated projects and contributed toward sustainable development and environmental management strategies. She has completed assignments in Australasia, the Pacific, Asia, the Middle East, the CIS countries, Africa, Eastern Europe, South America and the Caribbean. Ms. Epps is a Fellow of the Australasian Institute of Mining and Metallurgy.

- **Mr. Michael Martin (B.S. in mining engineering from Royal School of Mines, London University in England and M.A. in science from Kings College, Cambridge University in England)**, a senior associate of Behre Dolbear's Denver, Colorado, USA office, was BDASIA's Project Advisor. He has over 30 years of experience in the areas of engineering, operations, management, exploration, acquisitions, and development in the mineral industry, principally in the open pit mining of gold, copper, molybdenum and iron. He has had responsibility for capital and operating costs, infrastructure, and organization. He has been involved in many feasibility and due diligence studies, property evaluations, operational audits and optimizations, and mine equipment selection and costing. In addition, Mr. Martin has been responsible for all mining related items, including mine schedules, ore control, mine equipment, cash flow forecast reviews, and site management assessment. His consulting activities have included work in the United States and more than 19 foreign countries. Mr. Martin is a Qualified Professional Member of The Mining and Metallurgical Society of America and a Member of SME.

BDASIA's project team, with the exception of Mr. Martin, traveled to China to visit the Company's Xinzhuang Mine in Yifeng, Jiangxi that is reviewed in this report from April 1 to April 7, 2010. In addition, Dr. Deng also visited the Xinzhuang Mine from January 16 to January 18, 2011 and from January 8 to January 10, 2012. During BDASIA's visit, discussions were held with technical and managerial staff at the mine and plant sites. Operating performance from 2009 to 2011 and production schedules, budgets and forecasts from 2012 to 2014 were reviewed, together with the longer-term development plans.

This BDASIA report will contain forecasts and projections prepared by BDASIA, based on information provided by the Company. BDASIA's assessment of the projected production schedules and capital and operating costs will be based on technical reviews of project data and project site visits.

BDASIA notes that the production capacity, mining capacity and processing capacity used in this CPR have specific meaning. The Xinzhuang Mine's production system is separated into a mining system and a processing system, each of which has its own production capacity. The mining capacity refers to the capability of the mining system to produce ore under normal operation conditions and is commonly expressed in unit of tpa in this CPR; the processing capacity refers to the capability of the processing system to treat the ore produced from the mining system under normal operation condition and is also commonly expressed in unit of tpa in this CPR. The mining capacity can be the same as or different from the processing capacity. The production capacity, if not specified for mining and/or for processing, refers to the capability for both the mining system and the processing system of the Xinzhuang Mine in this CPR. The production rate is the speed to produce and/or treat ore for the Xinzhuang Mine; if not specified for mining and/or processing, it refers to the production speed for both the mining system and the processing system. The production rate can be the same as or different from the production capacity.

The metric system is used throughout this report. The currency used is the Chinese Yuan ("RMB") and/or the United States dollar ("US$"). The exchange rate used in the report is RMB6.30 for US$1.00, the rate of the People's Bank of China prevailing on December 31, 2011.

2.0 QUALIFICATIONS OF BEHRE DOLBEAR

Behre Dolbear & Company, Inc. is an international minerals industry advisory group which has operated continuously in North America and worldwide since 1911. Behre Dolbear & Company, Inc. and its parent, Behre Dolbear Group Inc., currently have offices in Beijing, Chicago, Denver, Guadalajara, London, New York, Santiago, Sydney, Toronto, Ulaanbaatar, Vancouver, and Hong Kong.

The firm specializes in performing mineral industry studies for mining companies, financial institutions, and natural resource firms, including mineral resource/ore reserve compilations and audits, mineral property evaluations and valuations, due diligence studies and independent expert reviews for acquisition and financing purposes, project feasibility studies, assistance in negotiating mineral agreements, and market analyses. The firm has worked with a broad spectrum of commodities, including base and precious metals, coal, ferrous metals, and industrial minerals on a worldwide basis. Behre Dolbear has acted on behalf of numerous international banks, financial institutions and mining clients and is well regarded worldwide as an independent expert engineering consultant in the minerals industry. Behre Dolbear has prepared numerous independent technical reports for mining projects worldwide to support securities exchange filings of mining companies in Hong Kong, China, the United States, Canada, Australia, the United Kingdom, and other countries.

Most of Behre Dolbear's associates and consultants have occupied senior corporate management and operational roles and are thus well-experienced from an operational view point as well as being independent expert consultants.

BDASIA is a wholly-owned subsidiary of Behre Dolbear & Company, Inc. established in 2004 to manage Behre Dolbear's projects in China and other Asian countries. Project teams of BDASIA commonly consist of senior-level professionals from Behre Dolbear's offices in Denver, Colorado of the United States, Sydney of Australia, London of the United Kingdom and other worldwide offices. Since its establishment, BDASIA has conducted over 50 technical studies for mining projects in China or mining projects located outside of China to be acquired by SEHK-listed Chinese companies, including preparing independent technical reports for the SEHK IPO prospectuses of Hunan Nonferrous Metals Corporation Limited, Zhaojin Mining Industry Company Limited, Hidili Industry International Development Limited, Real Gold Mining Limited, China Vanadium Titano-Magnetite Mining Company Limited, China Gold International Resources Corporation Limited, and China Kingstone Mining Holdings Company Limited, and for the Shanghai Stock Exchange ("SSE") IPO listing of Western Mining Company Limited. These eight companies were successfully listed on the SEHK/SSE from 2006 to 2011.

3.0 DISCLAIMER

BDASIA has conducted an independent technical review of the Company's Xinzhuang Mine and holdings. Site visits were made to the project site by BDASIA professionals involved in this study. BDASIA has exercised all due care in reviewing the supplied information and believes that the basic assumptions are factual and correct and the interpretations are reasonable. BDASIA has independently analyzed the Company's data, but BDASIA did not perform an audit on the Company's data. BDASIA has relied on the data provided by the Company, and the accuracy of the conclusions of the review largely relies on the accuracy of the supplied data. The Company has guaranteed that all the data provided for BDASIA's review are true, accurate and complete.

4.0 PROPERTY DESCRIPTION

4.1 Location, Access and Infrastructure

The Xinzhuang Mine is located approximately 37 kilometers ("km") by road east-northeast of the Yifeng County seat and 33 km by road west of Gaoan City (Figure 1.1), in the northwestern section of the Jiangxi Province in China. The western portion of the property falls within the Xinzhuang Township of Yifeng County and the eastern portion of the property falls within the Cunqian Township of Gaoan City; however, the current underground mining area and surface mine facilities are all located within the Yifeng County boundary. The geographic location of the Xinzhuang Mine covered by the current mining license is defined by longitudes from 115°06'54"E to 115°08'14"E and latitudes from 28°27'23"N to 28°28'15"N. The Yifeng County has a surface land area of approximately 1,935 square kilometers ("km^2") with a population of approximately 280,000.

Access to the Xinzhuang Mine is excellent. Provincial highway S318 passes through the Xinzhuang Mine area and connects the mine with the Yifeng county seat in the west and the State Highway G320 in the south. The road distance from the mine to Nanchang, the capital city of Jiangxi Province located in the east-northeast direction, via S318 then G320, is approximately 99 km. There are two nearby rail stations in the area. The Shanggao station on the Xinyu-Shanggao branch railroad is located in the southwest area of the mine with a road distance of approximately 45 km; the Xietang station on the Zhangjiashan-Jianshan branch railroad is located in the southeast area of the mine with a road distance of approximately 59 km. Concentrates produced from the Xinzhuang Mine can be trucked to either the Shanggao Station or the Xietang station then be shipped by rail to the smelter customers in various areas in China.

Electricity supply to the Xinzhuang Mine is currently supplied by a 35-kilovolt ("kV") transmission line connected to the local power grid near the town of Xinzhuang, which is sufficient for current production. A second 35-kV power transmission line will be constructed from the town of Xinzhuang to the mine to support the planned production expansion. In addition, the Xinzhuang Mine also has a 300-kilowatt ("kW") diesel generator, which can be used as the backup power source for hoisting and partial mine water pumping.

There is abundant surface and ground water in the Xinzhuang Mine area. The Shishui River, approximately 400 to 450 m from the mine shafts, flows from north to south through the eastern part of the mine area with a flow rate of 0.6 to 1.5 cubic meters per second ("m^3/s"). The limestones underlying a large part of the mine area contain a well-developed karst groundwater system and are the major aquifers in the area. Water for production and domestic use at the mine site is generally pumped-out good-quality mine water. Water from the tailings storage facility ("TSF") is also partially recycled for production. Water supply for production is not a problem; however, the abundant surface water and groundwater present in the area have brought a hydrological challenge for the mining operation at the Xinzhuang Mine. In order to solve the groundwater problem for mine production, the mine has been constructing a subsurface curtain grouting wall at the eastern side (along Exploration Line 23) of the deposit. This curtain grouting wall, together with the Cunqian granite intrusive complex in the south and southwest and a main apophysis from the intrusive complex in the north, has isolated the mining area from the ground water system, making underground mining operation feasible in the Xinzhuang Mine. This groundwater plugging technique has been utilized successfully at the Xinzhuang Mine.

The area is a rural agricultural district, and rice is the primary crop. Forest covers approximately 65% of the surface area in Yifeng County with abundant timber and bamboo resources. Industries in the Yifeng County area consist mostly of machinery manufacturing, timber, bamboo and building material production, ceramics, food and drinks, and medical and chemical products. Labor supplies are abundant in the area.

4.2 Climate and Physiography

The Xinzhuang Mine is located in a flat area in a peneplain with an average surface mean sea level ("MSL") elevation of approximately 52 meters ("m"). The Shishui River valley at the southeast is the lowest point in the mine area with a MSL elevation of approximately 40 m. The local topography is high in the northwest and low in the southeast.

The Xinzhuang Mine area has a subtropical warm and moist climate. The average annual temperature is around 17°C with a summer high of approximately 40°C in July and a winter low of approximately -8°C in January. Annual precipitation averages approximately 1,600 millimeters ("mm") and annual evaporation rate averages approximately 1,400 mm.

4.3 Property Ownership

Under the "Mineral Resource Law of the PRC", all mineral resources in China are owned by the state. A mining or exploration enterprise may obtain a license for the mining or exploration right for conducting mining or exploration activities in a specific area during a specified period of validity. The licenses are generally extendable at the expiration of their period of validity. The renewal application should be submitted to the relevant state or provincial authorities at least 30 days before the expiration of a license. To renew an exploration license, all exploration license fees must be paid and the minimum exploration expenditure should have been made for the area designated under the exploration license. To renew a mining license, all mining license fees, resource taxes, and resource compensation fees must be paid to the state for the area designated under the mining license. A mining license has both horizontal limits and elevation limits, but an exploration license has only horizontal limits.

Yifeng Wanguo currently holds a license for a mining right of 3.7692 km^2 in area for the Xinzhuang Mine; this license was issued by the Department of Land and Resources of Jiangxi Province. The horizontal boundary of the mining license is defined by 4 corner points and its MSL elevation range is from -500 m to 0 m. The license area is approximately 2.2-km long in the east-west direction and 1.6-km wide along the north-south direction. The license number is C3600002011013220103932. This license was issued on April 20, 2012 and is valid until April 20, 2032 and is extendable thereafter. The license permits Yifeng Wanguo to conduct underground mining for copper, lead, zinc and iron ores at a rate of 600,000 tpa; permitted production rate for the previous mining license was 300,000 tpa. All currently defined mineral resources and ore reserves reviewed by this report are contained within the limits of the mining license. The current permitted production rate is consistent with the planned mine expansion.

According to information provided by Yifeng Wanguo, copper-polymetallic ore production from the Xinzhuang Mine is subject to a resource tax of RMB5.00/t (US$0.79/t) for the copper-iron ore, RMB7.00/t (US$1.11/t) for the iron-copper ore, RMB10.00/t (US$1.59/t) for the copper-lead-zinc ore, and a resource compensation levy of 2% of the concentrate sales revenue. A value added tax ("VAT") of 17% is included in the sale price of various concentrates produced from the Xinzhuang Mine, and there is also a city-maintenance-and-construction levy of 5% of the VAT and an education levy of 5% of the VAT. The corporate income tax rate for Yifeng Wanguo is 25%. A security deposit for land reclamation of RMB10.6391 M (approximately US$1.69 M) was assessed by the Department of Land and Resources of Jiangxi Province in December 2010. Payments for the security deposit consist of an initial payment of RMB1,595,900 in 2011 and 14 following RMB625,800 annual installments and a final payment of RMB282,000 in 2026.

BDASIA has not undertaken a legal due diligence review of Yifeng Wanguo's mining license as such work is outside the scope of BDASIA's technical review. BDASIA has relied upon the Company's advice as to the validity of the mining license. BDASIA understands that the legal due diligence review of the mining license has been undertaken by the Company's PRC legal advisers.

4.4 History

The aeromagnetic anomaly related to the copper-polymetallic mineralization at Xinzhuang was discovered by a geophysical survey conducted by the No. 905 Team of the Airborne Geophysical Exploration Brigade under the Ministry of Geology of China in 1959.

In 1966, based on the detailed ground magnetic survey results for the Xinzhuang deposit, drilling was conducted by the No. 902 Geological Brigade ("Brigade 902") of the Geological Bureau of Jiangxi Province. The first drill hole intercepted the mineralization related to the magnetic anomaly. An initial geology report with preliminary resource estimation was completed by Brigade 902 in 1970.

Further exploration work for the Xinzhuang deposit was conducted by Brigade 902 from 1975 to 1978, and an updated geology report with resource estimation was completed in November 1983.

From April 1986 to December 1992, the Brigade of Geological Survey of West-Jiangxi of the Bureau of Geology and Mineral Exploration of Jiangxi Province of the PRC (the "West-Jiangxi Brigade") conducted supplemental detailed exploration for the Xinzhuang deposit. A geology report with an updated resource estimation was completed by the West-Jiangxi Brigade in December 1993.

These historical exploration campaigns completed a total of 171 core drill holes with a total drilled length of 77,723 m, 43 shallow drill holes with a total length of 2,603 m, and limited surface trenches and shallow wells. These holes were drilled on exploration lines at a line spacing of from 50 m in the central portion of the deposit to 100 – 250 m in the peripheral zones and oriented at an azimuth of approximately 353°30'. An exploration line near the center of the area was numbered as Exploration Line 0; the exploration lines to the east of Line 0 were numbered as consecutive odd lines and the exploration lines to the west were numbered as consecutive even lines. The central portion of the deposit was defined by Exploration Lines 6 to 19. The drill hole spacing on exploration lines at the central portion of the deposit generally ranges from 25 m to 100 m, and drill hole spacing on the peripheral exploration lines ranges from 50 m to 400 m.

A positive feasibility study for the initial phase of the mining operation, between exploration lines 10 and 17 and above the MSL elevation of -200 m, at a designed production capacity of 100,000 tpa, for a Xinzhuang lead-zinc mine was completed by Nanchang Nonferrous Metallurgical Engineering and Research Institute (the "Nanchang Institute") in October 2002.

In October 2005, the West-Jiangxi Brigade compiled an updated resource estimation above the MSL elevation of -500 m for the Xinzhuang copper-polymetallic deposit based on the historical exploration data.

In May 2006, the Nanchang Institute completed an updated feasibility study report with a designed production capacity of 99,000 tpa for the Xinzhuang copper-polymetallic mine.

The Xinzhuang Mine was constructed in the period from 2003 to 2006 with an initial designed production capacity of 200,000 tpa. Trial production from the mine and the processing plants started in January 2007; commercial production started in August 2007 for the processing plants and the mine. The mine reached the designed production capacity in 2008. Since then, it has continued to expand the production capacity. As of December 31, 2011, the mine's production capacity was approximately 300,000 tpa for mining and approximately 400,000 tpa for processing. The mine is currently accessed by a 319-m-deep main shaft, a 288-m-deep auxiliary shaft, and a 313-m long decline; mining is being conducted from five levels at the MSL elevations of -65 m, -105 m, -145 m, -185 m, and -225 m in areas between Exploration Lines 1 and 5 and between Exploration Lines 7 and 13. One additional level at the MSL elevation of -270 m has also been developed for future mining operation. The mining method adopted is primarily the cut-and-fill method. The concentrator processing system consists of two-stage crushing, one-stage grinding, flotation for copper, lead, zinc and pyrite concentrates, magnetic separation of magnetite iron concentrate from flotation tails, and concentrate dewatering.

Because the historical exploration work was conducted from the late 1960s to the early 1990s, Yifeng Wanguo engaged Jiangxi Geology and Mineral Resource Exploration and Development Company Limited ("JGMREDCL") to conduct additional underground infill drilling and sampling work and to update the resource estimation for the Xinzhuang copper-polymetallic deposit in June 2008 in order to produce a resource/reserve estimation to support the proposed IPO on the SEHK, and this work was completed in July 2009.

Based on the updated resource estimates produced by JGMREDCL for the Xinzhuang deposit, China Nerin Engineering Company Limited ("Nerin", the current name for the Nanchang Institute) completed an updated feasibility study for increasing the production capacity from approximately 300,000 tpa (mining)/400,000 tpa (processing) to approximately 600,000 tpa for the Xinzhuang Mine in January 2010. This feasibility study provided a reasonable basis for the ore reserve estimation for the Xinzhuang Mine.

The July 2009 JGMREDCL resource estimation report, the January 2010 Nerin feasibility study report, and the current mining operation data formed the bases for BDASIA's independent technical review of the Xinzhuang Mine operation.

Currently, the Xinzhuang Mine has approximately 263 employees, of which about 113 are underground technical and supporting mine workers, 90 are processing plant workers, and the remainder are mine management and supporting staff. Mine development and ore mining are conducted by a mining contractor, who has approximately 236 people working on site. The overall work force is expected to be expanded only slightly to 516 people when the mine expansion is completed at the end of 2013 as the production expansion will be mostly achieved through using larger and more mechanized equipment.

5.0 GEOLOGY AND DATABASE

5.1 Geology

Copper-polymetallic mineralization at Xinzhuang is related to a porphyry-skarn-hydrothermal mineralization system associated with a Yanshanian granite intrusive complex. Similar mineralization systems are widely distributed in Southeastern China.

5.1.1 Regional Geology

Stratigraphy outcropping in the region consists of Middle Proterozoic Shuangqiaoshan Group (Pt_2Sh) low-grade metamorphic rock series (sericite-quartz phyllites, quartz schists, meta-sandstones and meta-siltstones) in the north, Upper Paleozoic carbonate formations (including Upper Carboniferous Huanglong Formation – Chuanshan Formation (C_2h – C_2c), Lower Permian Qixia Formation (P_1q) and Upper Permian Changxing Formation (P_2ch)) in the middle, and the thick upper Cretaceous Nanxiong Formation (K_2n) purple-red continental basin clastic sediments in the south. Mesozoic Triassic Anyuan Formation (T_3a) coal-bearing continental clastic sediments occur only in local faulted basins, whereas Quaternary sediments (Q) are widely distributed in the middle and south of the region.

The Middle Proterozoic low-grade metamorphic rocks constitute the basement of the region and have been strongly folded. The Upper Paleozoic carbonate formations unconformably cover the metamorphic basement and have also been folded with an east-northeast to northeast direction folding axis.

The primary structure in the region is the Yifeng-Jingdezhen deep fault structure with an east-northeast strike, which controls the structural pattern of the region. The east-northeast to northeast faults in the region are generally larger in scale, and have a lateral and/or reverse movement, whereas the north-northeast to north-northwest faults are generally smaller in scale.

Igneous activities in the region generally belong to two orogenies, i.e., the late Proterozoic Jinning Orogeny and the Mesozoic Yanshan Orogeny. The Jinning igneous activity was generally limited to the east and north of the region and consists of the spilite-keratophyre sequence of volcanic rocks and lager biotite granite intrusives. The Yanshanian igneous activity was generally limited to the middle of the region, and consists of 17 small granite intrusive bodies, oriented along an east-northeast direction; the largest of these intrusives is the Cunqian granite complex with a plane surface area of approximately 1.8 km^2 and an isotope age of 117 Ma (Middle Yanshanian). This granite complex is directly associated with the copper-polymetallic mineralization at the Xinzhuang Mine.

5.1.2 Geology of the Xinzhuang Copper-Polymetallic Deposit

The Xinzhuang deposit area is located at the northern contact zone of the Cunqian granite complex. The Upper Carboniferous to Lower Permian carbonate rocks occur in the north of the mine area, and the Cunqian granite complex occurs in the south of the area, which was mostly covered by the Cretaceous Nanxiong Formation continental basin sediments. However, approximately 98% of the Xinzhuang Mine area is now covered by Quaternary sediments.

The carbonate rocks in the north of the Xinzhuang Mine area consist of the Upper Carboniferous Huanglong Formation – Chuanshan Formation light-gray to grayish-white, median-bedded, limestones, dolomitic limestones and dolomites, and the Lower Permian Qixia Formation light-gray to dark-gray, thin-bedded to median-bedded, limestones, marlstones, mudstones, and cherty limestones with some intercalated black carbonaceous mudstones and carbonaceous and calcareous mudstones.

The Huanglong Formation – Chuanshan Formation is the primary mineralization host in the deposit. Copper, lead-zinc and iron mineralization occurs along the inter-layer fracture zones within the carbonate rocks, the unconformity surface between the carbonate rocks and underlying low-grade metamorphic rocks, and the contacts between the granite and carbonates as replacement or open-space filling materials. Alteration related to the pyrite, chalcopyrite, magnetite, lead-zinc and siderite mineralization includes silicification, skarnization, marblization, and arkeritization. This formation is 300-m to 400-m in thickness, and it overlays unconformably on the Shuangqiaoshan Group metamorphic rocks.

The Qixia Formation is a less-important mineralization host for the Xinzhuang deposit; pyrite, chalcopyrite and lead-zinc mineralization occurs locally at the east contact zone with some marblization. The formation is more than 400-m thick and it has a parallel-unconformable contact with the underlying Huanglong Formation – Chuanshan Formation.

The Upper Triassic Anyuan Formation light-gray to grayish-white, thin- to median-bedded, fine-grained, feldspar-quartzose sandstones and siltstones with a thickness of more than 20 m only occur at the eastern portion of the Xinzhuang Mine area. It unconformably overlies on the other older strata.

The Upper Cretaceous Nanxiong Formation consists of continental basin clastic sediments. The upper portion of the formation is mostly sandy-conglomerates and pebble-bearing coarse sandstones, and the lower portion is mostly light-gray, grayish-white, and purplish-red, thick-bedded, conglomerates with intercalated purplish-red, thin- to medium-bedded, siltstones and sandy-conglomerates. The total thickness of the formation is over 300 m and it overlies unconformably on the other older strata.

The quaternary sediment cover averages around 15-m thick, but it can be as thick as over 40 m in the Xinzhuang Mine area.

The primary structure at the Xinzhuang Mine area is a southwest-plugging, overturned, anticline. The anticline axis is at the azimuth of 32°-65°. The core of the anticline consists of the Shuangqiaoshan Group metamorphic rocks and Huanglong Formation – Chuanshan Formation carbonates, and the wings of the anticline consists of Qixia Formation carbonates. The northwestern wing of the anticline is generally dipping at a low angle to the northwest, but the southeastern wing is overturned and dips at a high angle also to the northwest. There are also some secondary synclines and anticlines along the axis of the overturned anticline. The most favorable locations for mineralization are the contacts between the granites and the Huanglong Formation – Chuanshan Formation carbonates near the anticline axis plane and in the overturned wing as well as the unconformity surface at the bottom of the carbonate formation.

Fault structures have not been directly defined by drill holes or underground workings, but several faults in the north-northwest, north-northeast, and east-west directions were inferred from stratigraphy offsets and abrupt change of mineralized body attitudes. These fault structures are pre-mineral and controlled the intrusion of the granite complex and the distribution of the mineralization.

The Cunqian granite is a multiple-stage, shallow, granite intrusive complex formed from the same felsic magma source at approximately the same period of time with some cryptoexplosion characteristics. The rock types of the intrusive complex include biotite-plagioclase granite porphyry, biotite-high-plagioclase granite porphyry, biotite-two-feldspar granite porphyry, felsite porphyry, crystal-quartz porphyry, and cryptoexplosion breccia, among which biotite-plagioclase granite porphyry is the primary rock type. The intrusive body is elliptic on a plan view with a long-axis in the east-west direction of approximately 2.2 km, a short-axis in the north-south direction of approximately 0.85 km, and a surface area of approximately 1.8 km^2. It is a pipe-shaped body on cross sections. The northern contact of the intrusive body is complex with an overall northern dip at a moderate to high dip angle. Its contact zone with the Huanglong Formation – Chuanshan Formation strata is the most important mineralization zone in the Xinzhuang deposit. The south contact zone has a relatively simpler shape with an overall north dip at around 85°. The granite body intruded into the Qixia Formation strata along the southern contact with relatively weak mineralization and alteration.

There are some apophyses away from the main intrusive complex body. The largest is the main apophysis located north of the intrusive complex body with a distance of several tens of meters to around 200 m between Exploration Lines 35 and 20. The thickness of the main apophysis is generally 25 m to 40 m with a minimum of 1 m and a maximum of around 300 m. This main apophysis forms an aquitard in the deposit area and has helped Yifeng Wanguo to fight against the hydrological challenge.

Two cryptoexplosion breccia pipes were found at the northwest portion of the granite complex, between Exploration Lines 5 and 28, and have a plane area of approximately 0.16 km^2. The breccia pipes are hosted by the biotite-plagioclase granite porphyry.

Alteration associated with the granite intrusion and copper-polymetallic mineralization includes skarnization, chloritization, sericitization, kaolinization, silicification, k-feldspar alteration, hornfels, marblization, arkeritization, serpentinization, and carbonatization. From the intrusive complex to the country rocks, there are four alteration zones, i.e.:

- the altered porphyry zone with primarily sericitization, kaolinization, silicification, and minor epidotization, chloritization, k-feldspar alteration, and carbonatization. The zone is approximately 300-m wide and generally has a low copper concentration, but locally copper can be enriched to form porphyry type copper mineralization;

- the skarn zone consisting of an endoskarn subzone and an exoskarn subzone of several meters to several tens of meters wide. The endoskarns were formed from biotite-plagioclase granite porphyry and consist of mostly garnet and diopside with small amount of epidote and tremolite. The exoskarns were formed from limestone and/or dolomite and generally contain diopside, garnet, epidote, tremolite, actinolite, and a small amount of wollastonite. The skarn zone generally has a high concentration of copper and iron, which constitutes the primary mineralized zone in the deposit;

- the marble zone consisting of recrystallized calcite and dolomite of several meters to more than 100-m wide. This zone generally has low copper concentration but high lead-zinc concentration, and contains most of the lead-zinc mineralization in the deposit; and

- the marblized limestone zone of several meters to more than 100-m wide. Copper, lead and zinc mineralization is generally weak in this zone.

Figure 5.1 is a subsurface geology map below the Quaternary cover for the Xinzhuang copper-polymetallic deposit.

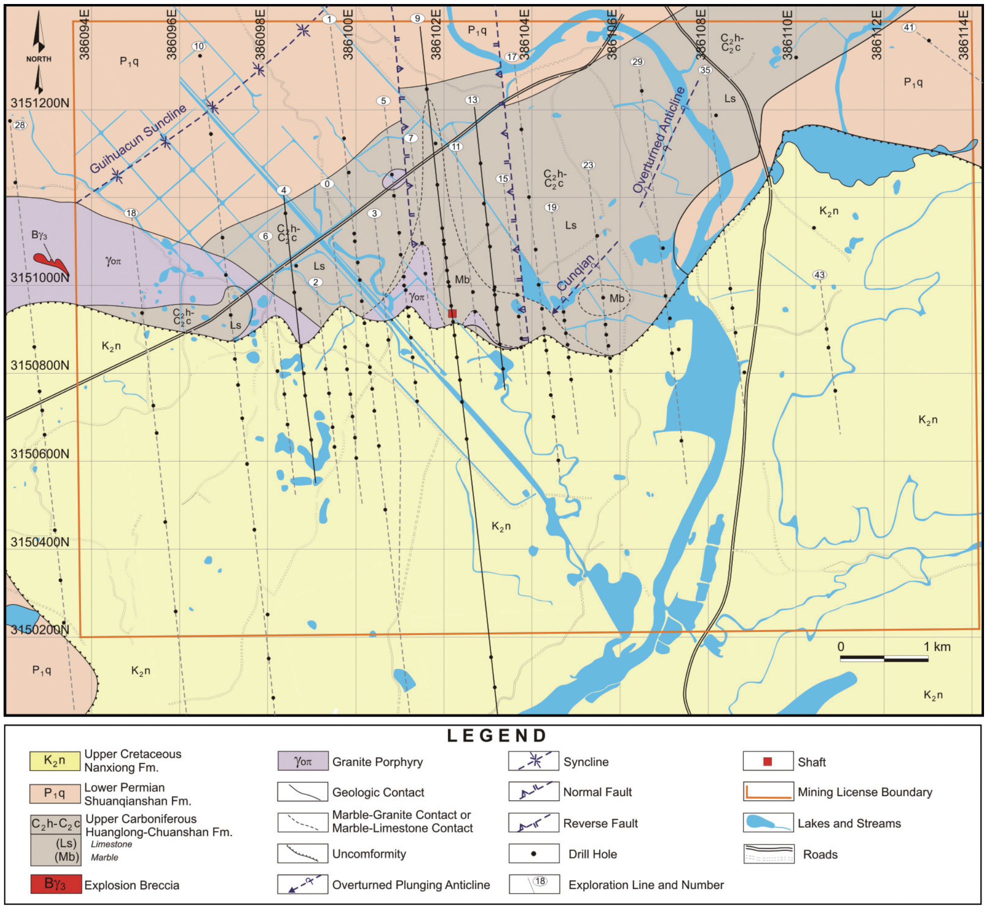

Figure 5.1 Subsurface geology map of the Xinzhuang copper-polymetallic deposit

5.1.3 Geology of the Copper-Polymetallic Mineralization

The mineralogy of the Xinzhuang deposit is quite complex. Over 50 minerals have been identified, more than 20 of which are metallic minerals. The most common metallic minerals are sulfide minerals, including pyrite, chalcopyrite, sphalerite and galena, and magnetite. Limonite and hematite occur in the shallow oxidized zone and are oxidation products. Minerals of economic importance at current conditions include chalcopyrite, galena, sphalerite, magnetite and pyrite. Primary gangue minerals are calcite, dolomite, quartz, feldspar, kaolinite and micas with less abundance of epidote, chlorite, tremolite, actinolite, garnet and diopside.

Metallic minerals occur as massive, lumps, disseminations, veins or veinlets in the deposit.

Based on the mineral composition, mineralization with economic importance at the Xinzhuang copper-polymetallic deposit is divided into three mineralization types:

- Copper-iron or Cu-Fe mineralization: copper occurring as chalcopyrite is the major economic element in this type of mineralization, but it may also contain various amounts of magnetite, pyrite and locally some galena and sphalerite. This is the most important mineralization type in the deposit. A large portion of the mineralization in the skarn zone and almost all the mineralization in the porphyry zone are of this type. Copper mineralization in the porphyry zone generally does not contain meaningful amounts of magnetite, galena and sphalerite. Ore production from this type of mineralization is used to produce copper concentrate, magnetite iron concentrate, and sulfur concentrate.

- Iron-copper or Fe-Cu mineralization: iron occurring as magnetite is the major economic element in this type of mineralization, but it also contains various amounts of copper as chalcopyrite and pyrite. This type of mineralization constitutes part of the mineralization in the skarn zone. Ore production from this type of mineralization is used to produce magnetite iron concentrate, copper concentrate and sulfur concentrate.

- Copper-Lead-Zinc or Cu-Pb-Zn mineralization: lead occurring as galena, and/or zinc occurring as sphalerite are the major economic elements in this type of mineralization, but it may also contain various amounts of chalcopyrite, pyrite and magnetite. Ore production from this type of mineralization is used to produce lead concentrate, zinc concentrate, copper concentrate, magnetite iron concentrate and sulfur concentrate.

The upper portion of the deposit has been oxidized, but the majority of the mineralized bodies (>95%) are located in the primary sulfide zone. Current and planned mining are all within the primary sulfide zone in the deposit. The small mineral resource in the oxidized zone will not be discussed further in this report.

Currently defined copper-polymetallic mineralized bodies at the Xinzhuang Mine are all located at the northern contact zone of the Cunqian granite complex. Four mineralized zones with a total of eight mineralized bodies have been delineated by drilling and underground developments.

Mineralized Zone I is located north, or at the hanging wall, of the main apophysis, and two mineralized bodies, I-1 and I-2, were defined in this zone. This zone is all located in the oxidized zone and is not the target for the planned mining operation.

Mineralized Zone II is located south, or at the footwall, of the main apophysis, and is controlled by the main intrusive contact, the unconformity contact surface between the Huanglong Formation and the Shuangqiaoshan Group, and inter-layer fracture zones within the Huanglong Formation – Chuanshan Formation carbonate rocks. Only one mineralized body, II-3, was defined in this zone. This zone contains all three types of mineralization with economic importance defined for the Xinzhuang deposit. The upper portion of the zone is oxidized, but the majority of the zone is located in the sulfide zone.

Mineralized Zone III is located within the fractured zones in the porphyry or related to the carbonate rock xenoliths south of the cryptoexplosion breccia pipes. Four mineralized bodies, III-4, III-5, III-6 and III-7 were defined in the zone. This zone also contains all three types of mineralization. It is generally unoxidized.

Mineralized Zone IV is located in the fractured zone within the crystal-quartz porphyry south of Zone III, and only one mineralized body, IV-8, was defined. This zone only contains copper mineralization with little other metals. It is generally unoxidized.

Of all the defined mineralized bodies, the II-3 mineralized body is by far the most important, as it contains approximately 75% of the currently-defined Measured and Indicated mineral resources. The second most important is the III-7 mineralized body, hosting approximately 8% of the resources.

The II-3 mineralized body is located between Exploration Lines 10 and 51 with a near-east-west strike length of over 1,500 m. It dips to the north with an average dip extension of approximately 340 m. The mineralized body was intercepted by 64 drill holes, with an average intercept thickness of 10.5 m and a thickness range of 0.16 m to 105.14 m. The thickness of the mineralized body is quite variable; it is generally thick in the middle of the deposit with average line thickness of 5 m to 17 m and pinches out gradually to the east and to the west. The mineralized body is split at the intersection of the granite contact with the unconformity surface, and the thickness increases significantly at the intersection. The shape of the II-3 body is irregularly stratiform with swells and pinches, splits and merges, along both strike and dip. The mineralized body dips to the north with variable dip angles (15° to 68°) at different parts of the mineralized body. The MSL elevation of the II-3 body ranges from +4 m to -700 m.

For the II-3 mineralized body, copper grade in the copper-iron ore generally ranges from 0.2% to 1.4%, with an average of 0.67% and a maximum of 11.43%; the copper grade distribution is rather irregular with a coefficient of variation of 117%. Within the lead-zinc ore, lead grade generally ranges from 0.5% to 3.0% with an average of 1.36%, maximum of 32.38%, and a coefficient of variation of 192%; zinc grade generally ranges from 0.8% to 6.0%, with an average of 3.67%, a maximum of 24.93%, and a coefficient of variation of 95%. Within the iron-copper ore, the magnetic iron ("mFe") grade generally ranges from 20% to 45%, with an average of 34.97%, a maximum of 59.45% and a coefficient of variation of 31%. In addition, there are generally variable mFe grades in the copper-iron ore, and variable copper grade in the lead-zinc ore and iron-copper ore.

The III-7 mineralized body is located between Exploration Lines 10 and 0 with a delineated strike length of 250 m, an average dip extension of 313 m, and an average intercept thickness of 11.57 m (ranging from 0.47 m to 58.28 m). The mineralized body is controlled by the fractured zones and the carbonate rock xenoliths within the porphyry and is lenticular in shape. It dips to the north-northwest at 40° to 60° and its MSL elevation range is -128 m to -570 m.

For the III-7 mineralized body, copper grade in the copper-iron ore generally ranges from 0.2% to 1.4%, with an average of 0.63%, a maximum of 1.87%, and a coefficient of variation of 66%. The mFe grade in the iron-copper ore is generally 20% to 45%, with an average of 31.42%, a maximum of 52.04%, and a coefficient of variation of 30%. Similar to the II-3 mineralized body, there is generally also a variable mFe grade in the copper-iron ore, and variable copper grade in the iron-copper ore and copper-lead-zinc ore.

The other mineralized bodies generally have shapes similar to the II-3 and III-7 bodies but are smaller in size.

Figures 5.2, 5.3 and 5.4 show mineralized body distribution along Exploration Lines 4, 9 and 13, respectively.

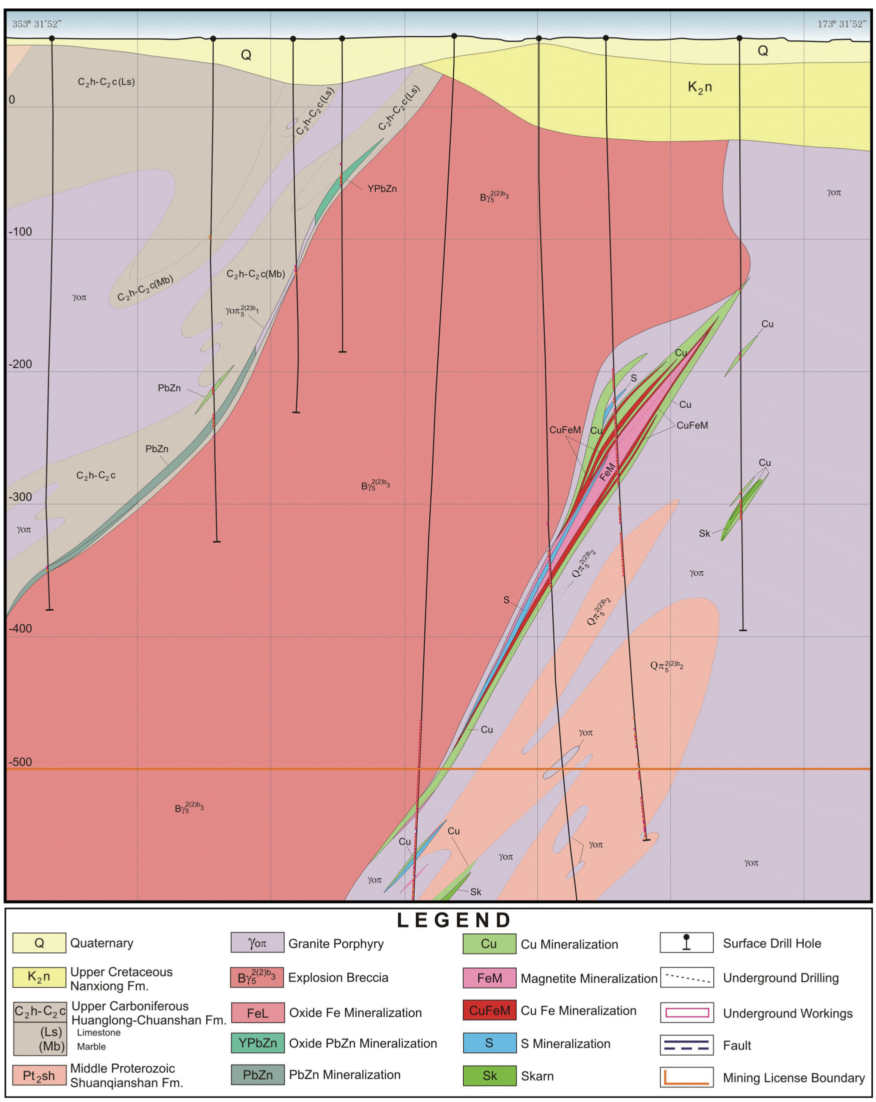

Figure 5.2 Exploration Line 4 section of the Xinzhuang copper-polymetallic deposit (Location of the section is shown in Figure 5.1.)

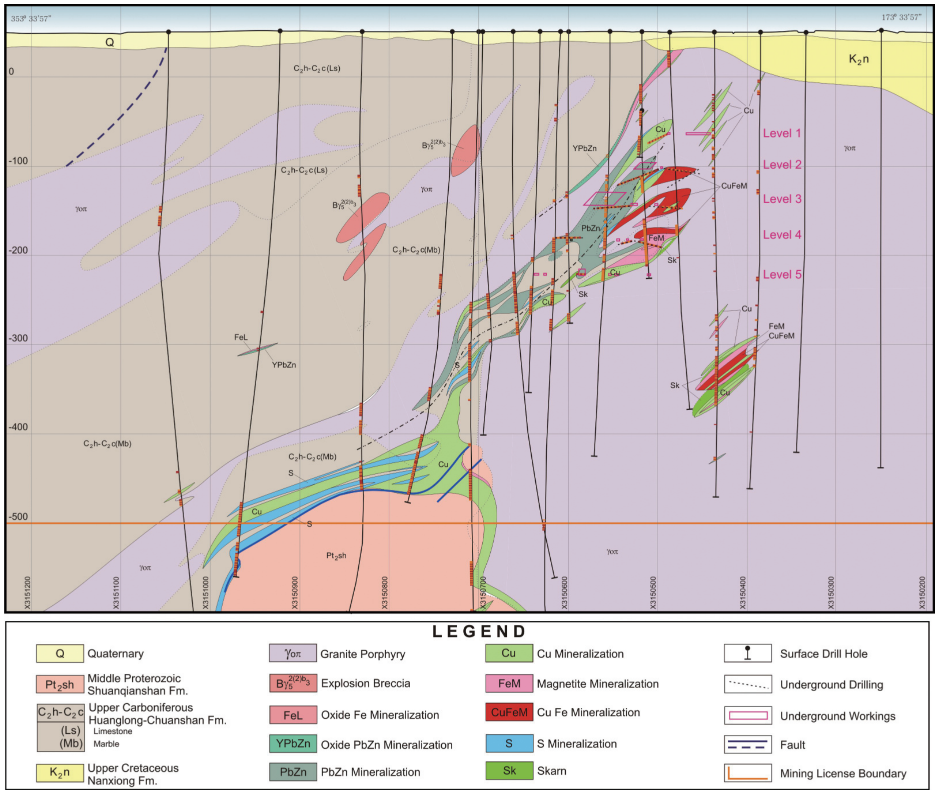

Figure 5.3 Exploration Line 9 section of the Xinzhuang copper-polymetallic deposit (Location of the section is shown in Figure 5.1.)

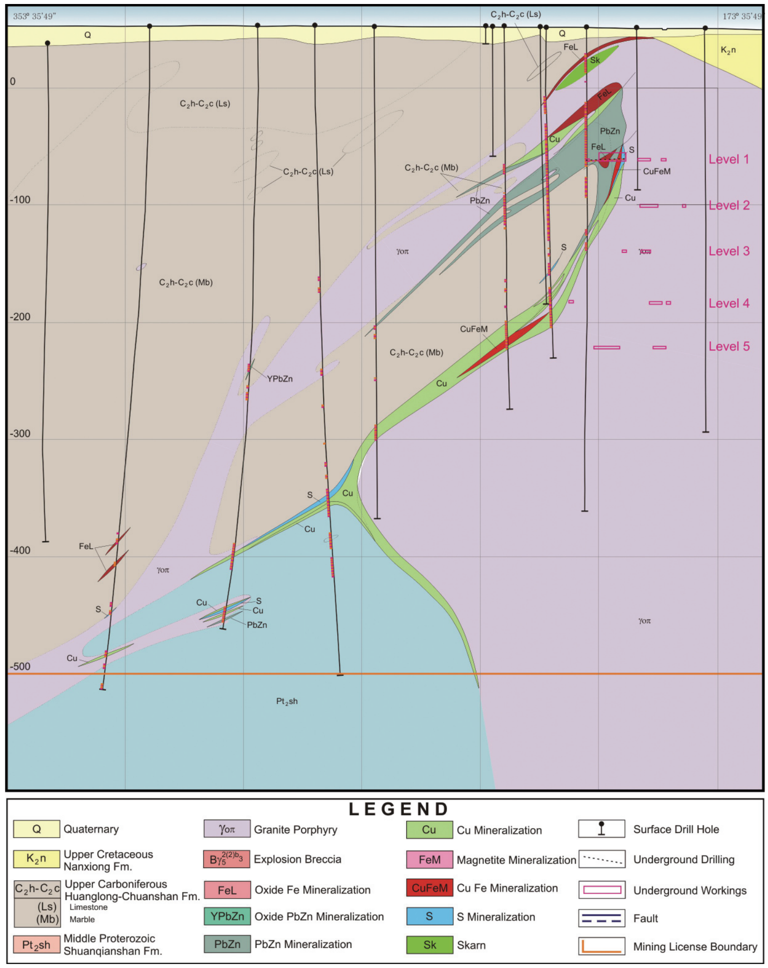

Figure 5.4 Exploration Line 13 section of the Xinzhuang copper-polymetallic deposit
(Location of the section is shown in Figure 5.1.)

5.2 Geological Database

5.2.1 Database Used for the Mineral Resource Estimates

Databases used for the mineral resource estimation are generated by licensed exploration entities and/or by the mining companies themselves in China. Guidelines specifying the appropriate sampling, sample preparation and assaying techniques and procedures for different types of mineral deposits are issued by the relevant government authorities. The databases used for mineral resource estimation are generally produced following these set guidelines.

The principal sample types included in the assay database for the Xinzhuang copper-polymetallic deposit reviewed in this report comprise surface diamond drill hole ("DDH") core samples and underground DDH core samples. Table 5.1 summarizes the database used for the mineral resource estimation for the Xinzhuang copper-polymetallic deposit reviewed in this report.

Table 5.1
Mineral Resource Database Statistics for the Xinzhuang Copper-Polymetallic Deposit

Sample Type	Xinzhuang Deposit
Surface Core Drilling	
Holes	171
Meters	77,723
Underground Core Drilling	
Holes	32
Meters	1,102
Underground Channel Sampling	
Meters	104
Assays	
Core/Channel Samples	8,132
Composite Samples	236
Density Measurements	
Core/Rock	339

5.2.2 Drilling, Logging and Survey

The 171 surface DDH holes for the Xinzhuang deposit were completed in three historical exploration drilling campaigns from 1966 to 1992. Drilling was conducted by state-owned licensed exploration entities; the first two campaigns of drilling (1966 – 1970 and 1975 – 1978) were conducted by Brigade 902, and the third campaign of drilling (1986 – 1992) was conducted by Brigade 901 of the Geological Bureau of Jiangxi Province. These DDH holes were drilled on exploration lines oriented at an approximate azimuth of 353°30' with a line spacing of 50 m in the central portion of the deposit to 100 – 250 m in the peripheral zones. Drill hole spacing on the exploration lines ranges from 25 m to 100 m for the central portion of the deposit and from 50 m to 400 m for the peripheral zones. This drill hole database formed a solid basis for a reasonable resource estimation for the Xinzhuang copper-polymetallic deposit.

The 32 underground DDH holes for the Xinzhuang deposit were completed by JGMREDCL from June 2008 to July 2009. These drill holes were generally infill drilling in nature, increasing the drilling density to mostly 50-m by 50-m in the central portion of the deposit. There were also a large number of underground drill holes completed by the Xinzhuang Mine for ore-control purposes, but these holes were not used for the current resource estimation as assay quality from these holes was not closely monitored. However, these holes have helped to define the mineralized body boundaries.

Drilling was conducted using Chinese-made drill rigs. The surface drill hole size was 173 mm, 150 mm or 110 mm at the top, reducing to 110 mm, 91 mm, 75 mm or 56 mm to the bottom of the hole. The underground drill hole sizes are generally 60 mm and 47 mm, with a small portion at 75 mm.

Core recovery was generally good. Surface drilling core recovery for the mineralized intervals averaged 88% for the I-1 mineralized body, 83% for I-2, 66% for the oxidized zone of II-3, 81% for the sulfide zone of II-3, 89% for III-4, 84% for III-5, 81% for III-6, 86% for III-7 and 90% for

IV-8. The overall average core recovery for the mineralized intervals was 83%. Surface drilling core recovery for the country rocks in the hanging wall and foot wall of the mineralized intervals generally averaged more than 75%. Surface drilling core recovery was generally lower in the oxidized zone than that in the sulfide zone because oxidation has reduced the rock coherence. However, as the oxide resource in the deposit is not currently considered as minable, the relatively low core recovery for the oxide resource should not have significant impact for the planned mining operation in the sulfide zone.

Underground drilling core recovery was generally higher than the surface drilling because of the improvement in drilling equipment and technology over time. Core recovery for the mineralized intervals ranged from 81% to 100% with an average of 89.5%; core recovery for country rocks ranged from 71% to 100% with an average of 87.3%.

Drill hole collar locations were surveyed by a survey instrument after drilling, and down-hole deviation was measured using down-hole survey techniques. Drill cores were logged in detail by a project geologist before sampling.

5.2.3 Sampling, Sample Preparation and Assaying

Drill core for the mineralized intervals as well as one or two country rock samples above or below were split by a mechanical core splitter along the central line of the core; half of the core was sent for assay, and the other half was retained for record. Typically the core was sampled at a 1-m to 2-m length, although variation in intervals may occur to coincide with geological contacts. The sample weight was generally between 3 kilograms ("kg") and 6 kg.

Some underground channel samples were also collected in the June 2008 – July 2009 exploration program. Sample channels were located in crosscuts and were cut 5-centimeters ("cm") wide and 3-cm deep. Sample length is generally 1 m to 2 m.

Sample preparation and analysis were conducted by the assay laboratory of the exploration entity in each of the exploration campaigns. However, samples for the exploration campaign of June 2008 – July 2009 were analyzed by the Assay Laboratory of Research Institute of the Geological Sciences of Jiangxi Province. Samples were generally prepared by a three-stage crushing and one-stage grinding procedure to reduce the sample particle size to approximately -200 mesh (0.074 mm).

As the Xinzhuang deposit is a copper-polymetallic deposit and as the economic importance of different elements changes over time, the elements analyzed for different exploration campaigns were also somewhat different. For the 1966-1970 and 1975-1978 exploration campaigns, the basic analytical items were TFe, SFe (sulfide iron), Pb, Zn, Cu and S; additional analysis was conducted for Mn, WO_3, Ag, In, Se, Te, Tl, As and Co for a small portion of the samples. For the 1986 – 1992 exploration campaign, the basic analytic items were Cu, S, Pb, Zn, Au and Ag; additional analysis was conducted for WO_3, TFe, mFe, SFe, and CFe (carbonate iron) for a small portion of the samples. For the June 2008 – July 2009 exploration campaign, the basic analytic items were Cu, Pb, Zn, S, TFe and mFe.

The analytic method used was generally atomic absorption spectrometry for Cu, Pb, Zn, Au and Ag, and wet chemical analysis for TFe and S. mFe grade was determined by separating the magnetic portion of a sample using a magnet before the analysis. These analytical methods are widely used in the mining industry in China and generally produce reliable results if conducted correctly.

5.2.4 Quality Control and Quality Assurance

Assay quality control and quality assurance programs include internal check assays, external check assays, and analysis of assay standards. The internal check assays were conducted by a different operator at the same laboratory and the external check assays were conducted by the Central Analytic Laboratory of the Geological Bureau of Jiangxi Province, a supervisory assay laboratory, located in Nanchang City of Jiangxi Province. To determine the assay quality, check assay results were compared with the original assay results, and the variance was compared to permitted random error limits specified by government regulation for various grade ranges.

For samples analyzed by Brigade 902 in the periods of 1966 – 1970 and 1975 – 1978, the percentage of the samples subjected to external check assays ranged from 3.5% to 5.8% for TFe, SFe, Cu and Zn, and from 1.4% to 2.9% for Pb and S. The internal check assay information was not available. For samples analyzed by the West-Jiangxi Brigade in the period of 1986 – 1992, 20% – 40% of the samples were subjected to internal check assays and at least 3% of the samples were subjected to external check assays. For samples analyzed by the Assay Laboratory of the Research Institute of Geological Sciences of Jiangxi Province in June 2008 – July 2009, about 20% were subjected to internal check assay and 3% to 8% were subjected to external check assays. Assay standards were also used for each batch of the assay samples to control the assay quality in the 1986 – 1992 and June 2008 – July 2009 exploration campaigns. It was reported that the internal and external check assay results for the various exploration programs for the Xinzhuang deposit were all within the permitted range.

From analysis of sampling, sample preparation and analysis procedures, check assay results, Xinzhuang Mine's production records, as well as BDASIA geologist's field observation of the mineralized bodies for the Xinzhuang copper-polymetallic deposit, BDASIA concludes that the analytical methods used for the Xinzhuang copper-polymetallic deposit produced acceptable results with no material bias.

5.2.5 Bulk Density Measurements

Bulk density data was collected using core/rock samples. The bulk density of core or rock samples was measured using the wax-coated water immersion method. A total of 339 bulk density measurements was undertaken for the Xinzhuang deposit. The average bulk density obtained from these measurements is 3.47 tonnes per cubic meter ("t/m^3") for copper ore, 3.58 t/m^3 for copper-iron ore, 3.38 t/m^3 for lead-zinc ore, and 4.02 t/m^3 for magnetite iron ore.

BDASIA considers that the average bulk density adopted is reasonable and appropriate, based on the mineral composition of the different ore types in the Xinzhuang deposit.

6.0 MINERAL RESOURCES AND ORE RESERVES

6.1 Mineral Resource/Ore Reserve Classification System

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia in September 1999 and revised in December 2004 ("the JORC Code") is a mineral resource/ore reserve classification system that has been widely used and is internationally recognized. It has also been used previously in independent technical reports for mineral resource and ore reserve statements for other Chinese companies reporting to SEHK. The JORC Code is used by BDASIA to report the mineral resources and ore reserves of the Company's Xinzhuang Mine in this report.

A Mineral Resource is defined in the JORC Code as an identified in-situ mineral occurrence from which valuable or useful minerals may be recovered. Mineral Resources are classified as Measured, Indicated or Inferred according to the degree of confidence in the estimate:

- a Measured Resource is one which has been intersected and tested by drill holes or other sampling procedures at locations which are close enough to confirm continuity and where geoscientific data are reliably known;

- an Indicated Resource is one which has been sampled by drill holes or other sampling procedures at locations too widely spaced to ensure continuity, but close enough to give a reasonable indication of continuity and where geoscientific data are known with a reasonable level of reliability; and

- an Inferred Resource is one where geoscientific evidence from drill holes or other sampling procedures is such that continuity cannot be predicted with confidence and where geoscientific data may not be known with a reasonable level of reliability.

An Ore Reserve is defined in the JORC Code as that part of a Measured or Indicated Resource which could be mined and from which valuable or useful minerals could be recovered economically under conditions reasonably assumed at the time of reporting. Ore reserve figures incorporate mining dilution and allow for mining losses and are based on an appropriate level of mine planning, mine design and scheduling. Proved and Probable Ore Reserves are based on Measured and Indicated Mineral Resources, respectively. Under the JORC Code, Inferred Mineral Resources are deemed to be too poorly delineated to be transferred into an ore reserve category, and therefore no equivalent Possible Ore Reserve category is recognized or used.

The general relationships between exploration results, mineral resources and ore reserves under the JORC Code are summarized in Figure 6.1.

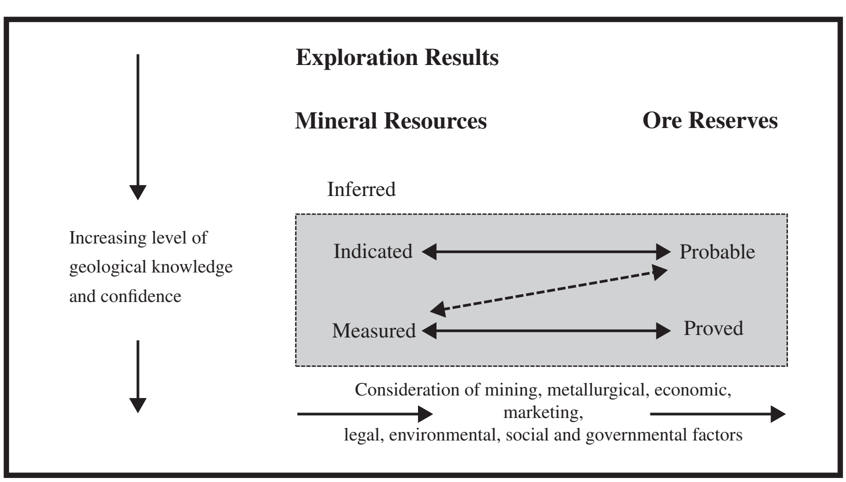

Figure 6.1 Schematic mineral resources and their conversion to ore reserves

Generally, ore reserves are quoted as comprising part of the total mineral resource rather than the mineral resources being additional to the ore reserves quoted. The JORC Code allows for either procedure, provided the system adopted is clearly specified. In this BDASIA report, all of the ore reserves are included within the mineral resource statements.

BDASIA notes that the estimated average mineral resource grade in this CPR represents the estimated in-situ mineral resources of the entire Xinzhuang Mine and the estimated average reserve grade in the CPR represents the estimated average grade of ore that can be extracted from the mine throughout the entire mining life.

6.2 General Procedures and Parameters for the Mineral Resource Estimation

The methods used to estimate mineral resources and the parameters used to categorize the mineral resources for a particular type of mineral deposit are generally prescribed by the relevant PRC government authorities. The mineral resource estimates are based on strictly defined parameters, which include minimum grades and minimum thicknesses. The mineral resources for a deposit are generally estimated by an independent engineering entity with a government-issued license.

The current resource estimation for the Xinzhuang copper-polymetallic deposit was conducted by JGMREDCL, which holds a Class B exploration license for solid minerals issued by the Department of Land and Resources of Jiangxi Province.

The drill hole or channel sampling density required to define a certain class of mineral resource depends on the type of deposit. Based on the mineralized body size and complexity, a deposit or a mineralized body is classified into certain exploration types before mineral resource estimation. As the copper-polymetallic mineralization at Xinzhuang generally comprises large irregularly stratiform mineralized bodies of hundreds to over one thousand meters in dimension with reasonably good continuity in both grade and thickness, the deposit was categorized as exploration type II under the Chinese classification system for copper-polymetallic deposits.

For the purpose of mineral resource estimation, all drilling and sampling data, along with other relevant geological information, were digitized into the MAPGIS system by JGMREDCL. MAPGIS is a computer software system widely used in China for preparation of plans and sections for mineral resource estimation. Sections and plans used for the July 2009 mineral resource estimation for the Xinzhuang Mine were produced by MAPGIS.

The parallel section method, a polygonal method based on projected cross sections, was used for the mineral resource estimation of the Xinzhuang copper-polymetallic deposit by JGMREDCL. Based on resource estimation reports provided by JGMREDCL and discussions with the JGMREDCL's technical personnel, the general procedures and parameters used in the mineral resource estimation are described below.

6.2.1 Determination of "Deposit Industrial Parameters"

The economic parameters for mineral resource estimation are referred to as "deposit industrial parameters" ("DIP") in Chinese literature or technical reports and are normally approved by government authorities for each deposit or type of deposit based on the government's industry specification. These parameters generally include the cutoff grades (separated into boundary cutoff grade, drill hole cutoff grade and/or block cutoff grade), minimum mining width, and minimum waste exclusion width. The DIP used for the mineral resource estimates of the Xinzhuang copper-polymetallic deposit reviewed in this report are summarized in Table 6.1.

Table 6.1
Deposit Industrial Parameters for Mineral Resource Estimation

Ore Type	Boundary Cutoff Grade	Drill Hole/Trench Cutoff Grade	Minimum Width	Minimum Waste Exclusion Width
Sulfide Copper	0.2% Cu	0.5% Cu	1 m	2 m
Sulfide Lead-Zinc	1.5% Pb + Zn	2.0% Pb + Zn	1 m	2 m
Magnetite	12.4% mFe	17.5% mFe	1 m	2 m

6.2.2 Determination of Block Boundaries and Confidence Levels

As the Xinzhuang deposit is a copper-polymetallic deposit, the mineral resources have been separated into three mineralization types, i.e. the copper-iron mineralization, the iron-copper mineralization and the copper-lead-zinc mineralization. The copper-lead-zinc mineralization is generally distributed in the carbonate rocks away from the intrusive contact zone, and therefore is generally separated from the copper-iron mineralization and iron-copper mineralization. The copper-iron mineralization and iron-copper mineralization are generally distributed in the skarn zone and/or inside the porphyry intrusive.

In defining the boundary for the mineralized bodies and the mineralization types within the mineralized bodies, the first step is to define the boundary for the mineralized body. Any mineralized intervals meeting one of the boundary and zone cutoff grades were used to define the mineralized body boundary. The second step is to define the mineralization types within the defined mineralized bodies. The priority order for defining the mineralization types used by JGMREDCL is copper-lead-zinc, copper-iron, and iron-copper; i.e., first, any mineralized interval meeting the lead+zinc cutoff grades will be defined as copper-lead-zinc type mineralization; secondarily, any remaining mineralized interval meeting the copper cutoff grade will be defined as copper-iron mineralization; finally, any remaining mineralized intervals meeting the mFe cutoff grade will be defined as the iron-copper type mineralization.

In the parallel section mineral resource estimation, a mineralized body on a cross section was separated into a number of blocks, with each block assigned a mineral resource confidence level based on the type, density and quality of available geological data. A Measured block was defined by drill holes and/or underground sampling channels with a data spacing no more than 70 m (along strike) by 50 m (in the dip direction). An Indicated block was defined by drill holes and/or underground sampling channels with a data spacing of no more than 150 m × 100 m. An Inferred block was defined by drill holes and/or underground sampling channels with a data spacing of no more than 200 m × 150 m.

6.2.3 Mineral Resource Estimation

In the mineral resource estimation process, the corresponding two-dimensional blocks on two neighboring parallel cross sections were used to define a three-dimensional block. The area of the three-dimensional block (S) was calculated from the areas of the two-dimensional blocks on cross sections (S_1 and S_2). When the area difference for the two blocks on cross sections was less than 40%, the following trapezoid formula was used for the three-dimensional block sectional area calculation:

$$S = \frac{S_1 + S_2}{2}$$

When the area difference for the two blocks on cross sections was more than 40%, the following frustum formula was used for the three-dimensional block sectional area calculation:

$$S = \frac{S_1 + S_2 + \sqrt{S_1 + S_2}}{3}$$

When a block on a cross section pinches out, the three-dimensional block sectional area was half the two-dimensional block area if the block pinches out to a line or one third of the two-dimensional block area if the block pinches out to a point.

The volume of the three-dimensional block was determined by multiplying the sectional area (S) by the distance (L) between the two sections.

The block mineral resource tonnage was determined by multiplying the volume by the average bulk density of the type of the mineralization in the block, based on the bulk density measurements. The mineralized body and deposit tonnages were based on the sum of the block tonnages.

Average drill hole or channel sample metal grades were calculated using the length-weighted average of all the drill hole or channel samples within the block boundary. The block average grade was calculated using the length-weighted average of all drill hole or channel intersections inside the block. The mineralized body grade was calculated using the tonnage-weighted average of all blocks inside the mineralized body. The deposit grade was calculated using the tonnage weighted average of all the mineralized bodies in the deposit.

6.2.4 The Mined-out Areas

The Xinzhuang Mine has been in production since January 2007. Historically mined-out areas up to September 30, 2008 were carefully surveyed by the mine, and the mined-out volume was calculated based on the survey results. The average bulk density and metal grades of the mineralized bodies where the mined-out volumes were located were assumed as the bulk density and metal grades for these mined-out volumes. The mined-out resources were subtracted from the original resource estimation to derive the remaining mineral resources as of September 30, 2008. Resources consumed by mining from October 1, 2008 to December 31, 2011 were subtracted from the September 30, 2008 resources to derive the mineral resources as of December 31, 2011.

6.2.5 Discussion

Based on BDASIA's review, BDASIA considers the mineral resource estimation procedures and parameters applied by JGMREDCL to the Xinzhuang deposit to be generally reasonable and appropriate. The deposit is a porphyry-skarn-hydrothermal copper-polymetallic deposit generally with reasonable spatial and grade continuity. The Measured and Indicated category blocks were defined by drill holes and underground sampling channels at a data spacing of no more than 70 m × 50 m and 150 m × 100 m, respectively, and have a reasonable level of geological control. The Inferred category blocks were also defined reasonably by using a data spacing of no more than 200 m × 150 m.

The Xinzhuang Mine has been in production since the beginning of 2007. The actual mine production results generally support the resource estimation. However, detailed production records and the consumed resources for the mined out areas were not available for BDASIA to conduct production reconciliation. BDASIA recommends that Yifeng Wanguo conduct detailed production reconciliation for the mined out areas to produce better support for the resource estimation.

Based on reviewing the deposit geology, drilling and sampling data, and procedures and parameters used for the estimation of mineral resources, BDASIA is of the opinion that the Measured, Indicated and Inferred mineral resources estimated under the 1999 Chinese mineral resource system for the Xinzhuang copper-polymetallic deposit by JGMREDCL conform to the equivalent JORC mineral resource categories. The economic portion of the Measured and Indicated resources can accordingly be used to estimate Proven and Probable ore reserves.

6.3 Mineral Resource Statement

The mineral resource estimates under the JORC Code as of December 31, 2011 for the Xinzhuang Mine, as estimated by JGMREDCL and adopted by BDASIA, are summarized in Table 6.2. The mineral resource estimates are inclusive of mineralization comprising the ore reserves.

BDASIA notes that the TFe grade for the Cu-Fe type resource was not estimated by JGMREDCL as it is below the mFe cutoff grades. BDASIA considers this is a conservative treatment for the resource estimation, as a portion of the magnetite present in the Cu-Fe resource can be recovered and has been recovered in actual mining operation in Xinzhuang.

Table 6.2
The Xinzhuang Mine Mineral Resource Summary – December 31, 2011

Mineralization Type	JORC Mineral Resource Category	Tonnage	Grades					Contained Metals				
			Cu	Pb	Zn	TFe	mFe	Cu	Pb	Zn	TFe	mFe
		kt	*%*	*%*	*%*	*%*	*%*	*kt*	*kt*	*kt*	*kt*	*kt*
Cu-Fe	Measured	6,218	0.80	–	–	–	–	49.66	–	–	–	–
	Indicated	12,989	0.69	–	–	–	–	89.99	–	–	–	–
	Subtotal	**19,206**	**0.73**	**–**	**–**	**–**	**–**	**139.65**	**–**	**–**	**–**	**–**
	Inferred	900	0.46	–	–	–	–	4.16	–	–	–	–
	Total	**20,106**	**0.72**	**–**	**–**	**–**	**–**	**143.81**	**–**	**–**	**–**	**–**
Fe-Cu	Measured	2,521	0.23	–	–	43.47	31.36	5.91	–	–	1,096	790
	Indicated	4,192	0.35	–	–	40.21	26.63	14.75	–	–	1,686	1,116
	Subtotal	**6,713**	**0.31**	**–**	**–**	**41.44**	**28.40**	**20.65**	**–**	**–**	**2,782**	**1,907**
	Inferred	319	0.52	–	–	44.16	31.05	1.66	–	–	141	99
	Total	**7,032**	**0.32**	**–**	**–**	**41.56**	**28.52**	**22.31**	**–**	**–**	**2,922**	**2,006**
Cu-Pb-Zn	Measured	2,269	0.15	0.95	4.93	–	–	3.51	21.51	111.88	–	–
	Indicated	2,748	0.11	1.73	3.78	–	–	2.99	47.60	103.74	–	–
	Subtotal	**5,017**	**0.13**	**1.38**	**4.30**	**–**	**–**	**6.50**	**69.12**	**215.62**	**–**	**–**
	Inferred	358	0.15	0.39	4.33	–	–	0.52	1.41	15.52	–	–
	Total	**5,376**	**0.13**	**1.31**	**4.30**	**–**	**–**	**7.03**	**70.52**	**231.14**	**–**	**–**
Total	Measured	11,008	–	–	–	–	–	59.08	21.51	111.88	1,096	790
	Indicated	19,929	–	–	–	–	–	107.73	47.60	103.74	1,686	1,116
	Subtotal	**30,937**	**–**	**–**	**–**	**–**	**–**	**166.81**	**69.12**	**215.62**	**2,782**	**1,907**
	Inferred	1,577	–	–	–	–	–	6.34	1.41	15.52	141	99
	Total	**32,514**	**–**	**–**	**–**	**–**	**–**	**173.14**	**70.52**	**231.14**	**2,922**	**2,006**

Note: The mineral resources also contain meaningful amounts of gold and silver. Based on limited composite sample analysis, the average grade is 0.19 g/t for gold and 13.1 g/t for silver in the Cu-Fe resource, 0.17 g/t for gold and 5.7 g/t for silver in the Fe-Cu resource, and 0.61 g/t for gold and 56.7 g/t for silver for the Cu-Pb-Zn resource.

BDASIA notes that the mineral resources of the Xinzhuang Mine in Table 6.2 were estimated by JGMREDCL, which is a state-owned, licensed Class B Exploration Entity in China, and was summarized in the report titled "Geology Report for Resources and Reserves in the Xinzhuang Cu-Pb-Zn Mine in Yifeng County for Jiangxi Province Yifeng Wanguo Mining Company Limited" dated July 2009. These mineral resource estimates have been reviewed, updated and adopted by BDASIA for this CPR.

Independent due diligence performed by BDASIA for the resource estimates includes:

- Three site visits to the Xinzhuang Mine;
- Review geology and mineralization of the Xinzhuang Mine in existing underground mine workings;
- Review geology and mineralization in cores for a number of selected drill holes;
- Review all the scanned copies of the original assay certificates for drilling performed in 2008, and check them against assays used in resource estimation for about 10% of randomly selected drill holes;

- Review the procedures for drilling, sampling, assaying, bulk density measurement, assay quality control data, geological interpretation, and resource estimation;
- Check resource estimation calculation; and
- Review actual mine production data from 2006 to 2011.

Based on the independent due diligence performed, BDASIA is satisfied that the data used for the resource estimation as well as the procedures, parameters and results of the resource estimation are appropriate and reasonable.

6.4 Ore Reserve Estimation

Ore reserves under the JORC Code comprise that portion of the Measured and Indicated mineral resources that are planned to be mined economically and delivered to the concentrator for processing. A feasibility technical study was conducted for the Xinzhuang Mine's planned expansion to the production capacity of 600,000 tpa by Nerin in January 2010 based on the updated mineral resource estimates completed by JGMREDCL in July 2009.

In order to define the ore reserves for the Xinzhuang Mine, Measured and Indicated mineral resources within the area planned to be mined were separated from the other mineral resources by Nerin. The area planned to be mined is defined by the MSL elevation of -65 m and -500 m (the lower limit of the current mining license), the curtain grouting wall along Exploration Line 23 on the east, the Exploration Line 4 on the west, the Cunqian granite porphyry intrusive complex to the south, and the main apophysis from the intrusive complex to the north. This area formed a relatively isolated hydrological system because of the impermeability of the curtain grouting wall and the intrusive rocks. The upper MSL elevation limit was determined to be -65 m, approximately 115 m to 120 m below the surface, as materials above that elevation have largely been oxidized, and, therefore, are inappropriate to be treated by the flotation and magnetic separation processing methods utilized by the mine. This will also keep the mining system away from the abundant surface water and groundwater and avoid any subsidence caused by mining in a sensitive agricultural area.

The area between the elevation -65 m and -500 m was divided into 10 mining levels of 40 m to 50 m in height at MSL elevations of -105 m, -145 m, -185 m, -225 m, -270 m, -315 m, -360 m, -405 m, -450 m, and -500 m. Measured and Indicated Resources defined by JGMREDCL on cross sections were converted to Measured and Indicated resources on these mining levels. Economic tests were conducted on Measured and Indicated resources of each mineralization type on each mining level, and it was found that all the Measured and Indicated resources in each mineralized type on each level were economic at assumed long-term metal prices, metallurgical recoveries and operating costs. Table 6.3 summarizes the total Measured and Indicated resources of each mineralized type within the defined mining area as of December 31, 2011. Comparison of the resource figures in Table 6.3 with that in Table 6.2 shows that the total Measured and Indicated resources within the planned mining area of 21.674 Mt (including all Cu-Fe, Fe-Cu and Cu-Pb-Zn resources) are only 70.1% of the total Xinzhuang Mine Measured and Indicated resources of 30.937 Mt, indicating significant resources are located outside the currently planned mining area.

Table 6.3
Measured/Indicated Mineral Resources within the Planned Mining Area – December 31, 2011

Mineralization Type	JORC Mineral Resource Category	Tonnage	Grades Cu	Pb	Zn	TFe	mFe	Contained Metals Cu	Pb	Zn	TFe	mFe
		kt	*%*	*%*	*%*	*%*	*%*	*kt*	*kt*	*kt*	*kt*	*kt*
Cu-Fe	Measured	5,571	0.82					45.93				
	Indicated	6,460	0.75					48.19				
	Total	**12,032**	**0.78**					**94.11**				
Fe-Cu	Measured	3,056	0.27			41.11	35.24	8.20			1,256	1,077
	Indicated	3,056	0.37			32.59	27.12	11.33			996	829
	Total	**6,113**	**0.32**			**36.85**	**31.18**	**19.53**			**2,253**	**1,906**
Cu-Pb-Zn	Measured	1,989	0.15	0.95	4.95			3.02	18.90	98.50		
	Indicated	1,540	0.09	1.38	3.60			1.34	21.28	55.46		
	Total	**3,529**	**0.12**	**1.14**	**4.36**			**4.35**	**40.18**	**153.96**		
Total	Measured	10,617	–	–	–	–	–	57.14	18.90	98.50	1,256	1,077
	Indicated	11,056	–	–	–	–	–	60.85	21.28	55.46	996	829
	Total	**21,674**	**–**	**–**	**–**	**–**	**–**	**117.99**	**40.18**	**153.96**	**2,253**	**1,906**

Note: The mineral resources also contain meaningful amounts of gold and silver. Based on limited composite sample analysis, the average grade is 0.19 g/t for gold and 13.1 g/t for silver in the Cu-Fe resource, 0.17 g/t for gold and 5.7 g/t for silver in the Fe-Cu resource, and 0.61 g/t for gold and 56.7 g/t for silver for the Cu-Pb-Zn resource.

As the mineralization at Xinzhuang consists of multiple mineralized types, which are preferably to be mined and transported separately, and as any subsidence caused by mining should be avoided below a sensitive agricultural area, the horizontal cut-and-fill mining method has been used in the past by the Xinzhuang Mine and will be used for the planned mining area of the Xinzhuang Mine in the Nerin feasibility study. An overall mining dilution factor of 7.2% (6.7% under the Chinese definition) and an overall mining recovery factor of 80% were used by Nerin in mine planning and converting the Measured and Indicated Resources to Proved and Probable Reserves. BDASIA reviewed these mining factors and found that the mining dilution factor is reasonable but the mining recovery factor is considered conservative based on the characteristics of the mineralized bodies and the utilized mining method.

It should be noted that the definition of the mining dilution factor in China is different from that in most Western countries. The mining dilution factor in China is defined as the ratio of the waste tonnage in the concentrator feed to the total concentrator feed tonnage, but the mining dilution factor in the West is defined as the ratio of the waste tonnage in the concentrator feed to the ore tonnage in the concentrator feed. Therefore, when using the same data for calculation, the Western mining dilution factor is always higher than the Chinese mining dilution factor, with the difference getting larger when the dilution factor is higher. For example, the Chinese mining dilution factor of 6.7% is equivalent to a Western mining dilution factor of 7.2%, and the Chinese mining dilution factor of 9.0% is equivalent to a Western mining dilution factor of 9.9%. As the JORC Code is used for mineral resource/ore reserve reporting for this BDASIA report, the Western definition of the mining dilution factor is used throughout this report.

6.5 Ore Reserve Statement

The ore reserve estimates under the JORC Code as of December 31, 2011 for the Xinzhuang Mine, as reviewed by BDASIA, are summarized in Table 6.4. These ore reserve estimates were based on Nerin's January 2010 feasibility study report for the Xinzhuang Mine and updated according to recent actual mine production data. The Proved reserve was estimated from the Measured resource within the planned mining area, and the Probable reserve was estimated from the Indicated resource within the planned mining area. The overall mining dilution factor used for the reserve estimates was 7.2% and the overall mining recovery factor used for the reserve estimates was 80%. BDASIA considers that the ore reserve estimates are reasonable and conform to the JORC Code. BDASIA also considers that the reserve tonnage estimate is on the conservative side because of a low mining recovery factor of 80% used for mine planning.

Table 6.4
The Xinzhuang Mine Ore Reserve Summary – December 31, 2011

Mineralization Type	**JORC Ore Reserve Category**	**Tonnage**	**Grades**					**Contained Metals**				
			Cu	**Pb**	**Zn**	**TFe**	**mFe**	**Cu**	**Pb**	**Zn**	**TFe**	**mFe**
		kt	*%*	*%*	*%*	*%*	*%*	*kt*	*kt*	*kt*	*kt*	*kt*
Cu-Fe	Proved	4,777	0.77					36.74				
	Probable	5,539	0.70					38.55				
	Total	**10,316**	**0.73**					**75.29**				
Fe-Cu	Proved	2,621	0.25			38.35	32.88	6.56			1,005	862
	Probable	2,621	0.35			30.41	25.30	9.06			797	663
	Total	**5,241**	**0.30**			**34.38**	**29.09**	**15.62**			**1,802**	**1,525**
Cu-Pb-Zn	Proved	1,706	0.14	0.89	4.62			2.41	15.12	78.80		
	Probable	1,320	0.08	1.29	3.36			1.07	17.02	44.37		
	Total	**3,026**	**0.12**	**1.06**	**4.07**			**3.48**	**32.14**	**123.17**		
Total	Proved	9,104	–	–	–	–	–	45.71	15.12	78.80	1,005	862
	Probable	9,480	–	–	–	–	–	48.68	17.02	44.37	797	663
	Total	**18,584**	**–**	**–**	**–**	**–**	**–**	**94.39**	**32.14**	**123.17**	**1,802**	**1,525**

Note: The ore reserves also contain meaningful amounts of gold and silver. Based on limited composite sample analysis, the average grade is 0.19 g/t for gold and 13.1 g/t for silver in the Cu-Fe resource, 0.17 g/t for gold and 5.7 g/t for silver in the Fe-Cu resource, and 0.61 g/t for gold and 56.7 g/t for silver for the Cu-Pb-Zn resource.

6.6 Mine Life Analysis

The ore reserve mine life of the Xinzhuang Mine reviewed in this study based on the December 31, 2011 ore reserve estimates of a total of 18.584 Mt in Table 6.4 and the planned long-term production rate of 600,000 tpa is approximately 31.0 years. The ore reserve mine life for a production rate of 300,000 tpa, as of December 31, 2011, is approximately 61.9 years. However, as there is a production ramp up process in the beginning for the 600,000 tpa case and a production ramp down process at the end, the actual mine life of the Xinzhuang Mine will be one or two years longer based on the current production plan. The planned reserve depletion rate is the same as the planned production rate. These ore reserve mine lives may change significantly in the future due to the following reasons:

- additional exploration and development of the mine could extend the minable area defined in the Nerin January 2010 feasibility study and a portion of the Measured and Indicated mineral resources outside the currently defined minable area could be converted to Proved and Probable reserves. These new ore reserves would increase the mine life; and

- changes in the production rate would also change the mine life. The mine life would be shortened if the production rate is increased to a level higher than the anticipated long-term production level in the Nerin feasibility study.

7.0 POTENTIAL FOR DEFINING ADDITIONAL MINERAL RESOURCES

Finding additional mineral resources and ore reserves is not currently an important task for the Xinzhuang Mine as the currently defined ore reserves within the planned mining area are sufficient to support mine production at the expanded production rate of 600,000 tpa for over 30 years. However, should it be proved in the future that the production rate can be increased again significantly above the 600,000 tpa level, it would become more important to define additional resources and reserves.

As discussed in the previous section, the current planned mining area is defined by Exploration Line 4 in the west and Exploration Line 23 in the east. There are significant additional defined mineral resources outside the planned mining area along strike in both the eastern and the western directions within the boundary covered by the current Xinzhuang Mine mining license. These areas are less-well drilled than the planned mining area. Additional drilling may increase the resource confidence level and may also increase the total mineral resources in these areas. Further technical study will be needed to see if the planned mining can be safely carried out into these areas at a reasonable cost.

In addition, the copper-polymetallic mineralization continues beyond the horizontal and vertical boundaries of the current Xinzhuang Mine mining license. Further exploration along the strike and down dip directions of the mineralization zone could also increase the mineral resources of the Xinzhuang deposit. BDASIA notes that a new exploration license will need to be obtained by Yifeng Wanguo before carrying out the exploration work in the area outside the Xinzhuang Mine mining license. BDASIA understands that Yifeng Wanguo is in the process of obtaining such an exploration license.

8.0 MINING

The Xinzhuang Mine currently produces ore from underground mining using the cut-and-fill mining methods. The mine is currently accessed by a 319-m-deep main shaft for ore hoisting, a 288-m-deep auxiliary shaft for personnel and materials, and a 313-m long ventilation inclined shaft (at a 30° angle); mining is conducted at five levels at the MSL elevations of -65 m, -105 m, -145 m, -185 m, and -225 m along a strike length of approximately 400 m.

The mine was constructed from 2003 to 2006 and mining operations started in January 2007 with an initial designed production capacity of 200,000 tpa. The mine reached this production capacity in 2008 and in 2009 the production capacity was expanded to approximately 300,000 tpa. The forecast production is planned to increase the production gradually from the approximately 300,000 tpa in 2011 to approximately 450,000 t in 2012 and 500,000 t in 2013 while development for the further expansion in production rate is carried out with 600,000 tpa forecast from 2014 onwards. The development averaged around 9,000 m per year from 2009 to 2011. The development rate is forecast to increase significantly to approximately 13,000 m in 2012 and 2013 during the construction period for the planned mine expansion, then decreases to approximately 9,000 m per year thereafter. Table 8.1 sets out the actual mine production and development over the last three years and the proposed production expansion in the next three years discussed in Section 8.3.

Table 8.1
Historical and Forecast Mine Production and Development for the Xinzhuang Mine, 2009-2014

	Historical			Forecast		
Item	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Ore Production						
Cu-Fe Ore (t)	92,200	100,070	91,650	50,000	100,000	150,000
Fe-Cu Ore (t)	160,400	165,550	133,870	300,000	300,000	300,000
Cu-Pb-Zn Ore (t)	47,970	40,960	74,550	100,000	100,000	150,000
Total Ore (t)	**300,570**	**306,580**	**300,070**	**450,000**	**500,000**	**600,000**
Development (m)	**9,435**	**6,966**	**10,617**	**13,000**	**13,000**	**9,000**

The underground mine is operated by Yifeng Wanguo although the majority of the underground production activity is carried out under contract by Wenzhou No.2 Well and Tunnel Construction Company using mining equipment owned by Yifeng Wanguo. The mine work force is currently 349:236 contractors and 113 of Yifeng Wanguo's technical and supporting staff. The mine is operated on a three 8-hour shifts per day basis and for 330 days per year.

The operation is characterized by a relatively low level of mechanization and small stopes with around 35 stoping areas across the five working levels. The production expansion is designed to allow larger stopes to be developed with higher mine production rates and mechanized equipment to increase productivity.

Due to the nature of the overlying land use there can be no subsidence within the mine area, and as part of the protection of this area a pillar of 115 m to 120 m has been left between surface and the upper limit of extraction.

8.1 Current Mining System

Mining occurs within all three types of mineralization, Cu-Fe, Fe-Cu and Cu-Pb-Zn, and Yifeng Wanguo uses the same mining method for each. These types of mineralization are within both the II-3 and III-7 orebodies. The thickness of the II-3 orebody generally ranges between 5 m and 17 m and averages 11 m, which represents the majority of the reserve. The III-7 orebody also varies in width with the average being around 12 m. The horizontal cut-and-fill stoping with cemented hydraulic fill at the Xinzhuang Mine is an appropriate mining method for these orebodies, providing flexibility to adjust the mining width to the size of the orebody.

Stope access is provided by inclined service raises with ladder ways and hoists. Mining of the stope commences three meters above the main haulage level with ore passes through the sill pillar to the haulage level where chutes are used to load 1.2-t mine cars. Fresh air enters the stoping area through the service raise, and return air exits the stope via a vertical raise to the level above the stope. All mining is carried out with hand held drills, and electric winch scrapers are used to load ore into the ore passes. Hydraulic cemented fill is placed in the stope at the completion of mining each lift. The hydraulic fill used by Yifeng Wanguo has a cement content of 10-20%.

Current mine equipment includes air powered drills and Z-30 rocker shovel loaders for main level development and 3-t and 1.5-t electric locomotives with 1.2-t mine cars for rail haulage on the main levels. Other ancillary equipment includes fans and small hoists.

The main shaft is equipped with a 1.4-cubic meter ("m^3") skip and counterweight and a double drum winder. Current production from the shaft is around 240,000-250,000 tpa (the current overall hoisting capacity of the shaft is approximately 320,000 tpa according to information from the mine). The remaining tonnage is hoisted in skip (in mine cars before 2011) up the inclined shaft where a single drum hoist lifts a 3.0-m^3 skip (three 1.2-t mine cars before 2011) per cycle. This has a capacity of approximately 170,000 tpa. Annual production of waste is about 60,000 tpa from development with some material hoisted and some placed in stopes as fill. The current overall hosting capacity of the auxiliary shaft is approximately 100,000 tpa.

Fresh air enters the mine via auxiliary shaft, and return air exits via the inclined shaft. The main 110-kW ventilation fan is situated on the -65-m level and current air flow is approximately 55 m^3/s.

8.2 Geotechnical and Hydrological Issues

8.2.1 Geotechnical Issues

The wall rocks of the orebody are marbles, breccias and granitic porphyries. The coefficient of rock strength (used in China) for the orebody and wall rocks is between 6 and 8, indicating overall good rock stability. Where development is within karst developed areas the rock is less stable but geotechnical conditions are generally good within the orebody in the skarn which has been assessed as hard competent rock; other wall rocks are also expected to be competent within the granitic envelope. Faults within the mine area have been interpreted as pre-mineralization and are considered not significant to underground mining activity.

While the visit underground by BDASIA was relatively limited, ground conditions within the stoping areas were observed as generally good with no apparent rock strength issues. Some areas of haulage development require concrete supports while most drives require little to no support. With larger drives, as planned in the feasibility study, development may require rock bolting with the use of shotcrete or concrete support continuing to be used in areas of localized weathering or fracturing.

As part of geotechnical assessment for the feasibility study, Nerin carried out analysis of the underground to determine likely ground movement during mining. The assessment utilized the finite element methodology using a software package called GeoFBA®V4.0, which is a rock mechanical and underground engineering and construction analytical software developed by Tongji Shuguang. The results indicated there would be no collapse of the overlying rock mass with only localized yielding. Nerin point out that the effect of joints and fissures in the rock were not included in the analysis therefore finite element results are only a guide and recommended monitoring of ground movement over the life of the mine is necessary.

8.2.2 Hydrological Issues

There are abundant surface water and groundwater in the Xinzhuang Mine area. The Shishui River flows from north to south through the eastern part of the mine area with a flow rate of 0.6 to 1.5 m^3/s. The limestones underlying a large part of the mine area contain a well-developed karst groundwater system and are the major aquifers in the area. Water for production and domestic use at the mine site is generally pumped-out good-quality mine water, supplemented by water from the

Shishui River if necessary. Water supply for production is sufficient; however, the abundant surface water and groundwater present in the area have brought a hydrological challenge for the mining operation at the Xinzhuang Mine, and this issue is the most significant risk component for the operation and is a key management concern. This hydrological challenge is not common in the mining industry. However, Yifeng Wanguo has taken sufficient rectification actions for this technical challenge, including constructing a curtain grouting wall, closely monitoring the groundwater level, installing excessive underground pumping capacity, starting mining the deposit 115-120 m below the surface and using a cut-and-fill method for mining. Therefore, the mining operation at the Xinzhuang Mine is currently being conducted normally. If these rectification actions were not taken, the underground mine could be flooded and the mining operation would have to stop. These rectification actions have increased the mining operating costs and mining capital costs. As the result, the Xinzhuang Mine's mining operating cost is higher than most other underground mining operations in China and there is also some additional capital costs incurred, such as capital for constructing the curtain grouting wall and installing excessive underground pumping capacity, for the Xinzhuang Mine because of this technical challenge.

In order to minimize the groundwater problem for mine production, the mine has established a subsurface curtain grouting wall at the eastern side of the deposit. This curtain grouting wall, together with the Cunqian granite intrusive complex in the south and a main apophysis from the intrusive complex in the north and east, has allowed a level of isolation of the mining area from the ground water system, making underground mining operation feasible in the Xinzhuang Mine. The curtain grouting wall located at Exploration Line 23 was designed by the Changsha Mine Engineering Institute which has significant experience in China of successfully designing these types of curtains for iron ore mines and coal mines. The curtain is established by pumping grout into a series of closely-spaced drill holes; the curtain is approximately 300-m deep and extends around 300 m from north to south.

Monitoring bores from either side of the curtain indicate the curtain is successfully retaining the bulk of the water outside the mine area. The water level within the mine area continues to be lowered with pumping rates of around 170 m^3 per hour ("m^3/hr"), with 100 m^3/hr pumped from the -225-m level and 50-70 m^3/hr pumped from the -105-m level. The main pump station is situated on the -225-m level (at an approximate depth of 280 m) where there are four large storage facilities to manage water flows and allow sediment to be settled out of mine water prior to pumping. Yifeng Wanguo advised that the installed pumping capacity at the -225-m level is approximately double the pumping requirements. A dual power supply is installed from surface to the pump station to provide security of power supply to the station.

It is envisaged as part of the expansion that the pumping capacity of the -225-m level pump station will be increased to 430 m^3/hr with five pumps operating out of a total of seven pumps. A pump station is also planned for the -315-m level, which will pump water up to the -225-m level pump station at an expected rate of 200 m^3/hr. Longer term drainage requirements are planned to be assessed once the rate of drawdown of the water table is determined in the short to medium term.

As previously mentioned Nerin has recommended surface and underground monitoring of ground water in and around the mine area as well as in the rock mass to detect movement. Yifeng Wanguo is already monitoring water levels within the mine area and adjacent to the property.

8.3 Planned Mine Expansion

Based on the updated resource estimates, Nerin completed a feasibility study in January 2010 for increasing the mining capacity from approximately 300,000 tpa to approximately 600,000 tpa.

The design depth of the planned mine is between -65 m to approximately -500 m (between approximately 120 – 555 m below surface). The main level interval is between 40 m and 50 m. Nerin has proposed a two stage development proposal: Stage 1 mining is between the -65-m level and the -315-m level (approximately 120 – 370 m below surface) and Stage 2 is between the -315-m level and the-500-m level (approximately 370 – 555 m below surface).

To provide the increased production rate Nerin is proposing replacing the current mining approach using handheld equipment and electric winch scrapers with service raise access to a more mechanized approach with diesel equipment and decline access to stopes. Nerin plans to keep the present rail haulage of ore on each level but increase the equipment capacity. The upgrade will include the sinking of three new shafts: a main shaft for hoisting ore, a service shaft to hoist personnel and materials with mine dewatering and compressed air pipes and a ventilation shaft for exhaust air.

The main shaft is planned with a 4.5-m diameter ("Ø") with a 4-m^3 skip with a counterweight. The shaft is designed to be approximately 460-m deep with ore hoisted from the -360-m level (at an approximately 414 m depth) at a capacity of 600,000 tpa. The shaft is located to the southwest of the ore zones and within the plant area; the main shaft bins on surface will feed into the expanded plant.

The service shaft is planned at 5.8-m Ø with a double deck cage, with a counterweight, with the capacity to carry 70 mine workers. The shaft is designed to be approximately 395-m deep in stage 1 of the mine development and provide access to all major levels. The shaft is located approximately 120 m to the northeast of the main shaft and southwest of the ore zones; the shaft is close to the current inclined shaft access. Both shafts are planned to be reinforced concrete-lined shafts and equipped with friction winders. The ventilation shaft is planned at 3.5-m Ø and initially will have a depth of approximately 240 m with access to the upper four major levels. It will be deepened as the production levels get deeper; the shaft is located to the east of the ore zones.

When the new main shaft and service shaft are completed and put into production, the current main shaft, auxiliary shaft and inclined shaft will no longer be needed for mine production and will be abandoned. Abandoning the current main shaft will free the ore blocks next to the current main shaft for mine production as the current main shaft penetrates the ore bodies in the deposit and some ore blocks next to the shaft would have to be left underground as permanent pillars to protect the current main shaft if the current main shaft were still used for mine production. The new main shaft and service shafts are located sufficiently away from the ore bodies so no ore blocks will have to be left underground permanently to protect the new shafts.

During the last BDASIA site visit in January 2012, BDASIA notes that Yifeng Wanguo has completed engineering drilling for the three planned shaft sites, and is in the process of preparing the ground for shaft sinking. Based on the current plan, the three new shafts sinking will be completed in 2012.

The mining method for all three types of mineralization, Cu-Fe, Fe-Cu and Cu-Pb-Zn, is planned to be horizontal cut-and-fill stoping with cemented hydraulic fill. The method is generally unchanged from the current operations except that the stopes will be accessed by declines rather than by the present raises, in order to allow diesel equipment to enter the stopes, thereby increasing productivity. Each horizontal slice or lift will be 3.3 m in height with three slices/lift per access drive and will follow the ore zone width with a minimum of 1.0 m. The stopes designed by Nerin allow for 3-m permanent pillars at both the sill and crowns of the stope. At completion of a lift, filling up to 2-m of the backs is planned. Development profile dimensions will need to be increased to allow for the larger equipment, increasing in width and height from a nominal 2.5 m to 3.6 m and 2.4 m to 3.3 m, respectively. Nerin has estimated a mining loss of 20% due to the size of the pillars; BDASIA considers the stope designs to be relatively conservative given the quality of the orebody and adjacent rock, and there may be potential to review the size of these pillars in the medium term after further mining experience has been gained. An estimate of 7.2% (6.7% Chinese) dilution of the ore has been added to the reserve to account for wall rock dilution and possible dilution from mucking ore from a fill floor within the stopes. Overall, BDASIA considers further optimization of the mine design is warranted and has the potential to improve productivity and production rates.

Sublevels from the decline are planned at an interval of 10 m to access the stope allowing three lifts to be mined per sublevel. The main levels remain similar to the current interval of between 40 m and 50 m where the rail haulage will be established. Ore passes to the main haulage levels are planned in the footwall of the stopes rather than within the stopes currently. The same fill material of classified tailings with cement will be used in conjunction with waste rock from development. As the stope access will be outside the stope, higher waste volumes will be produced from development of the stopes than presently produced.

Nerin has estimated that four single boom jumbos with hydraulic drills will be required for development, and four 3-m^3 load-haul-dump ("LHD") units will be required for development and production loading. Nerin has also made estimates of other service equipment requirements including explosive charging units, elevated platforms and shotcrete machines to augment the main production units.

Rail haulage on the main levels is planned to take ore from the stope ore passes and discharge the ore through grizzlies, to restrict rock size to a maximum of approximately 350 mm, into the main ore passes connecting the main levels to the loading station at the main shaft. Trains will consist of ten 2-m^3 bottom dumping mine cars pulled by 10-t electric locomotives.

For the planned expansion of the mine the ventilation system will require upgrading to account for the increased production and the change from electric equipment to diesel powered equipment. Based on the ventilation requirements for the diesel fleet the planned air flow for the upgraded mine has been calculated at 108 m^3/s, approximately twice the current volume flows.

The present fill plant is located close to the current service shaft; the plant main components are two storage tanks and a cement silo. Tailings, classified by the removal of the fine fraction, are received into one tank at around 50% pulp density and increased to 65% by allowing water to drain while the other tank is being filled; once tailings are at the required density, the tailings are placed underground. Cement is added at the required ratio of 1:5 to 1:10 at the discharge from the plant prior to placement into the borehole to underground. There are currently two 110-mm Ø boreholes from surface to the -65-m level for placement of fill underground. Nerin proposes that the new plant be constructed with similar capacity to the current plant of 40 m^3/hr but with a new design with vertical bins rather than the current tanks.

Waste from development will be placed in the stopes when available. In the service shaft daily schedule proposed by Nerin an allowance for 265 t hoisted per day of waste in mine cars has been made which accounts for the proposed development in waste rock.

8.4 Mine Production Plan

Based on the updated resource estimates, Nerin completed an updated feasibility study in January 2010 for increasing the mining capacity from approximately 300,000 tpa to approximately 600,000 tpa.

The mine schedule for the expanded production plan proposes that mining occurs on two main levels with the initial production from the -105-m level and the -225-m level, progressing to the -145-m level and the -270-m level and then to the -185-m level and the -315-m level before production would progress to the deeper stage two with mining from the -360-m level and the -450-m level, progressing to the -405-m level and the -500-m level. The available ore tonnage per vertical meter does indicate an increase in production may be achieved without a major increase in the rate of vertical advance. The current plan requires on average only one main level to be developed every three years while NERIN currently schedules development at a rate that would complete this within two years. Current development over the last three years has been around 9,000 m which is forecast to increase to around 13,000 m in 2012 and 2013 and then reduce to 9,000 m in 2014. The development increase in 2012 to 2013 is for the planned mine expansion construction, and the development rate to support mine production after the mine expansion is expected to be around 9,000 m per year. The mine plan by Nerin incorporates the planned purchase of mechanized development equipment to meet the increased development requirement.

Underground mine production has been generally stable for the last three years at the then permitted 300,000-tpa level (Table 8.1). As the planned new mining shafts are located away from the current mining shafts, mining operation will not be interrupted during the construction process of the new mining shafts. Based on information from the Company, the current mining system can actually support a production rate much higher than the 300,000-tpa production rate permitted by the previous mining license. In April 2012, the Company obtained a new mining license with a permitted production rate of 600,000 tpa, the mine can start mining at a rate higher than the production rate of 300,000 tpa permitted by the previous mining license. Production will increase gradually from the current level to 450,000 t in 2012 and 500,000 t in 2013 while the capital expansion program is implemented with the sinking and equipping of the three shafts. Once the capital works are completed and the underground stopes prepared, production will increase up to the planned 600,000 tpa in 2014. Production is planned to remain at this level for the extraction of all the reserves; this is equivalent to a mine life of approximately 31 years. There is some potential for delays in ramping up production if shaft sinking is affected by adverse water flows or poor ground conditions.

The expansion plan prepared by Nerin in the feasibility study has mining operations increasing in mechanization of both the development and stoping operations bringing higher productivity to the operation. With the significant reserve base and the high tonnage per vertical meter of 43,000 t, BDASIA considers there is some scope for increasing the production rate if dewatering rates can be advanced, and recommends Yifeng Wanguo reviews this possibility when finalizing the main shaft capacity. Yifeng Wanguo advised BDASIA that mine production is not susceptible to any disruption to the power supply and no major load shedding is applied to the mine.

The planned development schedule for the shafts and related underground infrastructure including main level stations is dependent on shaft sinking being completed in nine months. There is some potential for this development period to be extended if water or poor ground conditions are encountered.

9.0 METALLURGICAL PROCESSING

The Xinzhuang Mine upgrade and expansion project involves, among other requirements, an expansion of the processing and its auxiliary facilities to reach a 600,000 tpa treatment capacity. In order to do so a new processing plant, Concentrator No.3 with 200,000-tpa capacity, will be added to the existing two concentrators, which also can process 200,000 tpa each. The new, total processing capability will be 600,000 tpa.

The concentrator feed will comprise several types of ore, including Cu-Pb-Zn ore; Cu-Fe ore and Fe-Cu ore. These ore types will be processed separately and will yield individual concentrates of copper, lead, zinc, sulfur and iron. The copper and lead concentrates will also carry some payable gold and silver values.

The initial test work on these ores was conducted by the Central Laboratory of Jiangxi Province Geology and Mineral Resources Bureau ("Jiangxi Bureau"). More detailed testing was completed by the Central-South University ("CSU") in July 2007. The latter test work served as the source of the project data and parameters for the Nerin feasibility study report issued in January 2010. The above reports as well as discussions held with Yifeng Wanguo's experts are the basis for BDASIA's considerations on the processing presented herein.

9.1 Metallurgical Testing

Two detailed and competent investigations, one on Cu-Pb-Zn ore and the other on Fe-Cu ore were conducted by CSU in March – July 2007. Two test reports were issued at the end of this period.

These investigations as well as the earlier ones by the Jiangxi Bureau demonstrated that these ore types are amenable to concentration by flotation and magnetic separation. The two investigations are reviewed below.

9.1.1 The Cu-Pb-Zn Ore

The test samples were provided to CSU by Yifeng Wanguo. There were thirteen samples taken at various locations of the mineralized bodies II-3 and III-4. The samples represented roughly 414,000 t of ore in the Xinzhuang deposit. The composite of the samples was prepared by crushing, screening, splitting and blending, as is the standard practice at the mine. Representative samples of the composite were used for testing as well as various analyses.

Chemical analyses were performed by semi-quantitative X-ray fluorescence spectrometry ("XRF") and standard wet-chemical methods. The results are presented in Table 9.1.

Table 9.1
Results of Analyses of Potential Economic Elements in the Cu-Pb-Zn Ore Test Sample

	Grade	
Element	**XRF Analysis**	**Wet Chemical Analysis**
Pb (%)	0.46	0.44
Zn (%)	5.82	4.55
Cu (%)	0.17	0.15
Cd (%)	–	0.012
Co (%)	0.01	0.006
TFe (%)	29.46	29.27
S (%)	10.79	15.65
Au (g/t)	–	1.07
Ag (g/t)	–	37.5

The wet-chemical analysis also determined the concentration of other components of the ore, including SiO_2 (10.19%), Al_2O_3 (2.51%), CaO (3.19%), MgO (2.05%), MnO (5.76%), K_2O (0.13%), Na_2O (0.042%) and TiO_2 (0.035%). Phosphorus (0.011%) and arsenic (0.38%) were the deleterious elements.

The major minerals present in the ore are galena (0.4%), sphalerite (7.3%), chalcopyrite (0.3%) and pyrite (24.5%), siderite (25.2%), magnetite (0.5%), quartz (9.2%), calcite/dolomite/ankerite (29.6%), and sericite/chlorite (2.7%) and others (0.3%). The sulfides of lead are present as 75.55% of the total lead minerals, sulfides of zinc are 90.11% of zinc minerals and the sulfides of copper, including both primary and secondary, are 98.67%. These values represent theoretical, maximum recoverable portions of each metal. The actual recoveries will be lower.

Sphalerite crystal grain sizes are between 0.02 mm and 2 mm, generally between 0.05 mm and 1 mm. About 75% of the mineral replaces pyrite and gangue as lumps, and about 20% is disseminated sparsely in gangue at grains up to 0.6 mm. Galena is evenly distributed in pyrite, sphalerite and gangue. The grain sizes are generally between 0.03 mm and 0.4 mm. Chalcopyrite is relatively sparse and is highly scattered. Its grain size, generally between 0.02 mm and 0.15 mm, is finer than that of other sulfides. Pyrite is abundant and its grain sizes may vary between 0.05 mm and 0.8 mm, depending on crystal form. Magnetite and siderite are evenly distributed and their grain sizes may range from 0.005 mm to 0.05 mm. Gangue minerals are mainly quartz and ankerite. Their crystal sizes are mostly between 0.05 mm and 0.2 mm and 0.05 mm and 0.15 mm, respectively.

The above distribution of grain sizes indicates that fine grinding would be required to recover sphalerite and, particularly, galena. This was supported by a series of grinding tests indicating that the grind of about 90% -0.074 mm would be required for successful liberation.

In view of the chemical and mineralogical characteristics of the ore two flotation process approaches were considered and tested:

- selective flotation of each ore component; and
- copper-lead bulk flotation followed by their separation and selective flotation of zinc followed by pyrite.

After determining practical and optimum grind, reagent types and dosages, the two candidate flowsheets were tested by batch and closed circuit experiments. The test results obtained, as summarized in Table 9.2, demonstrated that the copper-lead bulk flotation followed by their separation and then selective zinc and sulfur flotation has an edge over the selective flotation. Table 9.2, compares the grades and recoveries for the four concentrates obtained when using the flowsheets under consideration.

Table 9.2
Comparison of Candidate Flowsheets based on Closed Cycle Testing Results

Item	Selective Flotation of Cu, Pb, Zn and S	Cu-Pb Bulk Flotation and Separation, Zn and S Selective Flotation
Copper Concentrate, Yield %	0.31	0.30
Grade Cu, %	15.3	16.5
Recovery Cu, %	31.9	32.8
Lead Concentrate, Yield %	0.90	0.84
Grade Pb, %	35.2	36.8
Recovery Pb, %	70.6	68.0
Zinc Concentrate, Yield %	8.6	8.6
Grade Zn, %	48.3	48.9
Recovery Zn, %	92.2	93.2
Sulfur Concentrate, Yield %	18.3	18.4
Grade S, %	46.8	47.6
Recovery S, %	55.7	57.9
Test Feed		
Grade Cu, %	0.15	0.15
Grade Pb, %	0.45	0.45
Grade Zn, %	4.53	4.51
Grade S, %	15.42	15.3

It should be noted that gold and silver reported mostly with sulfides, with the highest values present in copper and lead concentrates (15.56 and 7.35 g/t Au and 534 and 645 g/t Ag respectively). The values with the zinc and sulfur concentrates were considerably lower (2.56 and 2.85 g/t Au and 56 and 6 g/t Ag respectively) and may not be payable.

9.1.2 The Fe-Cu Ore

The comprehensive test work on the processing of this ore was also conducted by the CSU and reported in July 2007.

Yifeng Wanguo provided the test ore samples collected from the mineralized bodies III-4 (8 samples), III-5 (6 samples) and II-3 (5 samples). These samples represented approximately 999,000 t of ore in the deposit. Their chemical composition, determined by semi-quantitative XRF as well as conventional wet-chemical methods, is summarized in Table 9.3.

Table 9.3
Results of Analyses of Potential Economic Elements in the Fe-Cu Ore Test Sample

	Grade	
Element	**XRF Analysis**	**Wet Chemical Analysis**
TFe (%)	36.46	40.31
Cu (%)	0.56	0.55
Pb (%)	0.01	0.01
Zn (%)	0.07	0.07
S (%)	4.68	7.45
Au (g/t)	–	0.63
Ag (g/t)	–	4.0

The major economic minerals are iron, copper and, perhaps, sulfur. The very low values for lead and zinc are evident and indicate that the two cannot play any role economically. Regarding copper, close to 91% is within primary sulfides, 7% with secondary sulfides. About 2% is non-recoverable copper, i.e., copper oxides. The deleterious elements are arsenic at 0.012% and phosphorus at 0.025%.

The mineral composition of the ore includes iron and copper minerals along with pyrite and minor sphalerite and galena. Gangue minerals are mostly quartz and calcite with minor feldspar, sericite and chlorite. Apatite, zircon, rutile, fluorite and others are present only in trace amounts.

Magnetite occurs as compact aggregates (78%) with grain sizes generally over 3 mm. It can also be disseminated (20%) in gangue with grain sizes of 0.1 mm to over 1 mm, generally 0.2 – 0.6 mm. These occurrences indicate that the mineral will be amenable to magnetic separation. Chalcopyrite is unevenly distributed. It either occurs with magnetite (generally as 0.04 – 0.6 mm size grains) or with the gangue in very fine grains (generally below 0.04 mm, some even below 0.005 mm). This type of chalcopyrite amounts for about 90% of the total chalcopyrite in the ore. Pyrite is generally disseminated in the gangue; its grain size generally between 0.15 mm and 0.5 mm. Limonite is sparsely distributed mostly replacing magnetite with grains sized from 0.02 mm to 0.15 mm. Siderite distribution is uneven; it may replace magnetite or be disseminated in calcite. Gangue minerals are mostly quartz and calcite with minor feldspar, sericite and chlorite.

To summarize, magnetite and pyrite are medium-grained while chalcopyrite is fine-grained and disseminated. Based on these minerals' size distribution, to liberate about 90% chalcopyrite, a grind of 100% -0.1 mm will be required. At that grind about 85% of the minerals would be below 0.074 mm, and magnetite and pyrite grains are free.

Given the mineral composition and characteristics of the ore, the most economically and technologically feasible concentration methods for their concentration are flotation for the copper and iron sulfides and magnetic separation for magnetite. Preliminary test work determined that between two possible approaches, i.e., magnetic separation followed by sulfide flotation and sulfide flotation followed by magnetic separation; the latter produces better grades and recoveries and is significantly easier to apply industrially. Consequently, this approach was selected.

Additional test work demonstrated that in flotation, the copper and iron sulfides should be floated selectively and not in bulk. The comparison of the selective and bulk flotation results are shown in Table 9.4.

Table 9.4
Comparison of Selective and Bulk Flotation Results

	Selective (Grade/Recovery %)		Bulk (Grade/Recovery %)	
Item	**Cu**	**S**	**Cu**	**S**
Copper Concentrate	13.25/82.08	33.74/15.72		
Sulfur Concentrate	0.21/4.66	40.71/67.98		
Sulfide Concentrate			6.24/76.50	48.66/41.92
Middling #3			1.3/13.73	13.73/34.76
Test Feed	0.52/100.00	7.52/100.00	0.52/100.00	7.46/100.00

As demonstrated by the above results, the selective flotation approach was more favorable and was used in further test work.

The comprehensive and detailed flotation test work was designed to determine optimum flotation processing parameters. The most practical fineness of grind for copper flotation was determined to be 71% -0.074 mm. Dosages of collector, lime and the number of cleaners for copper flotation were established. Additionally, optimum conditions for pyrite flotation were defined. Having all parameters established, a closed cycle flotation test was carried out and the test results are presented in Table 9.5.

Table 9.5
Results of Closed Cycle Test on Flotation of Copper and Sulfur

		Grade, %		Recovery, %	
Product	**Yield %**	**Cu**	**S**	**Cu**	**S**
Copper Concentrate	2.34	19.46	31.43	87.94	9.91
Sulfur Concentrate	11.98	0.16	50.71	3.70	81.89
Tails	85.68	0.05	0.71	8.36	8.20
Feed	100.00	0.52	7.42	100.00	100.00

These results were satisfactory. They may be improvable under the steady and continuous conditions in a processing facility.

The final products of the copper and sulfur flotation will be copper and sulfur concentrates and flotation tails. These flotation tails are rich in iron (magnetite) and low in sulfur, which was floated away in the previous steps.

The magnetic separation tests on the sulfide flotation tails (the plant feed ground to 71% and 80% -0.074 mm) were run at four different magnetic field intensities, i.e., 300, 800, 900 and 1000 Gauss. The comparison of the results obtained is shown in Table 9.6.

Table 9.6
Effect of Magnetic Field Intensity and Feed Grind on Magnetite Separation Results

Magnetic Field Intensity (Gauss)	Original Feed Fineness of Grind, % passing 0.074 mm	Fe Concentrate Yield, %	TFe Grade %	S Grade %	TFe Recovery %
300	71.4	50.26	65.35	0.83	83.69
	79.9	42.38	65.82	0.86	70.29
800	71.4	50.36	65.43	0.81	82.70
	79.9	43.43	65.43	0.85	69.53
900	71.4	47.88	65.80	0.82	80.57
	79.9	43.02	65.80	0.85	68.59
1000	71.4	49.05	65.44	0.85	82.02
	79.9	43.55	65.44	0.88	70.30

The results of magnetic separation tests showed that, at any magnetic field intensity, the coarser grind of the original test feed of 71.4% -0.074 mm yields substantially higher TFe recoveries than the finer grind of 79.9% -0.074 mm. The lowest tested magnetic field intensity of 300 Gauss produced best iron recoveries as well as one of the lowest sulfur contents (0.83%) in the magnetite concentrate. The iron grade, under any test conditions, was very satisfactory, i.e., between 65% and 66% TFe.

The test results on the Fe-Cu ore samples demonstrated that the concentration of the economic minerals from the ore is simple and efficient.

In conclusion, the developed approaches and obtained test results are satisfactory. In addition, the professional quality of the test work is considered high. BDASIA believes that the results from the laboratory results could be obtained under commercial, industrial plant conditions.

The metallurgical testing resulted in the concentration parameters needed for the plant design work. These parameters are at the same time expected metallurgical concentration results. They are compiled and presented in Table 9.7.

Table 9.7
Processing Design Parameters and Expected Metallurgical Results

	Ore Type		
Product	**Cu-Pb-Zn**	**Fe-Cu**	**Cu-Fe**
Copper Concentrate, Yield %	0.30	1.41	2.97
Grade Cu, %	16	18	22
Grade Au, g/t	7.60	1.81	2.42
Grade Ag, g/t	1,232	359	268
Recovery Cu, %	30	82	86
Lead Concentrate, Yield %	1.41		
Grade Pb, %	40(1)		
Grade Au, g/t	1.61		
Grade Ag, g/t	672		
Recovery Pb, %	65		
Zinc Concentrate, Yield %	7.80		
Grade Zn, %	50		
Grade Au, g/t	1.31		
Grade Ag, g/t	108		
Recovery Zn, %	85		
Sulfur Concentrate, Yield %	10.50	3.87	28.36
Grade S, %	42	35	42
Recovery S, %	55	55	80
Iron Concentrate, Yield %		41.31	
Grade Fe, %		63	
Recovery Fe, %		69	
Feed to Processing			
Grade Cu, %	0.16	0.31	0.76
Grade Pb, %	0.87		
Grade Zn, %	4.59		
Grade S, %	8.02	2.46	14.89
Grade Fe, %		37.72	
Grade Au, g/t	0.57	0.17	0.18
Grade Ag, g/t	52.81	8.18	12.27

Note:

1. Not actually achieved in the laboratory. Must be commercially obtained as it is the lowest-grade saleable concentrate.

9.2 Current Processing Plants

There are currently two concentrators at the Xinzhuang Mine, namely, Concentrator No.1 and Concentrator No.2. Each has a capacity to treat ore at the rate of 200,000 tpa.

Concentrator No.1 has two sections. The first section has a 100,000-tpa capacity and treats Cu-Pb-Zn ore by flotation and magnetic separation, producing copper, lead, zinc, sulfur and iron (magnetite) concentrates. The second section, at a 100,000-tpa capacity, treats Cu-Fe ore by flotation and magnetic separation, producing the copper, sulfur and iron (magnetite) concentrates.

Concentrator No.2 has a capacity of 200,000 tpa. It was designed to treat Fe-Cu ore, by flotation and magnetic separation. Copper, sulfur and iron (magnetite) concentrate are produced in this plant. The plant also has the capability to produce zinc concentrate should the zinc quantities in the feed warrant it.

9.2.1 Description of Concentrator No.1

The Sections 1 and 2 flowsheets for Concentrator No.1 are shown in Figures 9.1 and 9.2, respectively. The two sections share the crushing facilities. The Cu-Pb-Zn and Cu-Fe ores are crushed in campaigns. Each ore type is subjected to three stages of crushing and screening. The first two stages are in open circuit and the third is in a closed circuit with a screen. The finely crushed products (-12 mm) are stored in individual and separate fine ore bins which feed two separate ball mill grinding/classification circuits, each pertaining to its own section. Each finely crushed ore is ground to 65% -0.074 mm and sent to its own concentrating line.

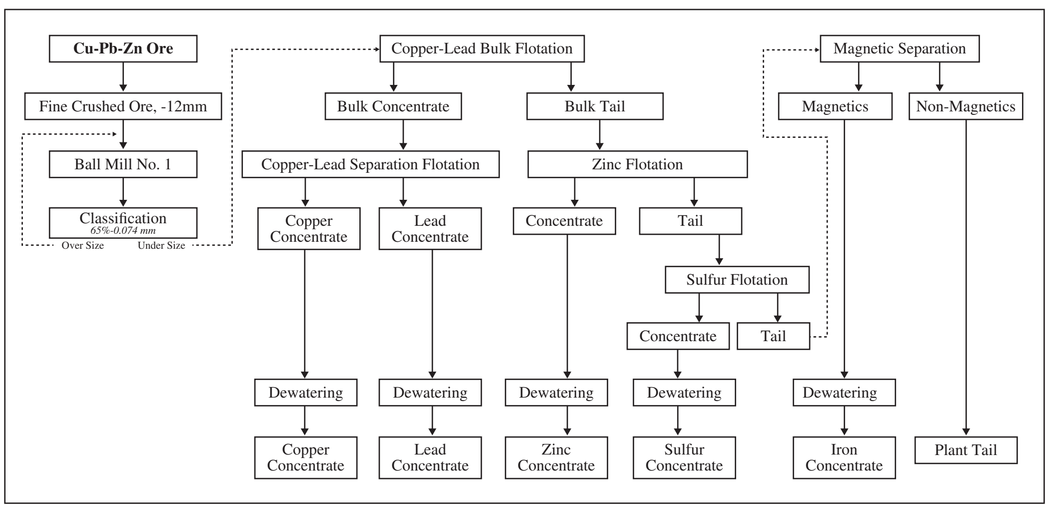

Figure 9.1 Simplified Processing Flowsheet for Section 1 of Concentrator No.1

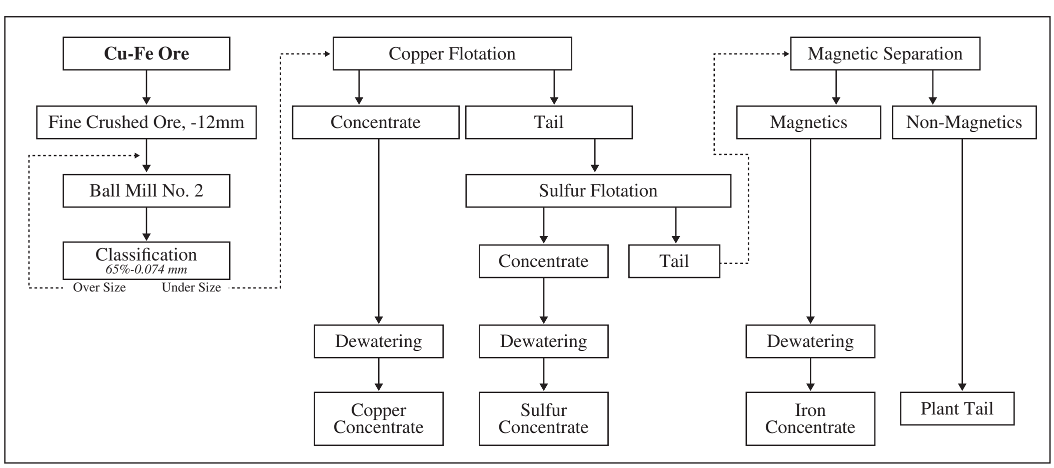

Figure 9.2 Simplified Processing Flowsheet for Section 2 of Concentrator No.1

In Section 1, the concentration process begins with the copper-lead bulk flotation and is followed by selective zinc and sulfur flotation. The latter tails are subjected to magnetic separation. The copper-lead rougher bulk concentrate is cleaned several times and then the two minerals are separated from each other, yielding the final Cu and Pb concentrates. The zinc and sulfur rougher concentrates are cleaned several times each until the final concentrate grades are reached. The iron (magnetite) which remains in the final flotation tails is concentrated by magnetic separation. All final concentrates are dewatered by thickening and filtration and stored in the concentrate bins until sold and shipped out. BDASIA notes that up to the end of 2011, the Company had not activated the process to produce lead concentrate from the system due to cost-effectiveness reasons as the lead grade in the Cu-Pb-Zn ore was not sufficiently high. However, based on the current production schedule, the lead grade is expected to improve starting from 2012 as the Company would extract more Cu-Pb-Zn ore from areas with higher lead grade, some lead concentrate may be produced from 2012 on.

The Section 2 feed, fine-crushed to -12 mm, is ground to 65% -0.074 mm in a closed ball mill/classification circuit. The ground ore is subjected to selective rougher copper flotation and rougher sulfur flotation. The rougher concentrates are cleaned several times each. Iron (magnetite) is concentrated from the final flotation tails. The final concentrates of copper, sulfur and iron are dewatered and stored in concentrate bins awaiting shipment.

When fully refurbished, Concentrator No.1 will use two jaw crushers (PD6090 and PD4075) and one cone crusher (GYP 900) with vibrating screens (SZZ 1250×2500 and SZZ 1500×4000) to produce the fine-crushed product. The latter will be ground in two 2,130-mm-diameter and one 1,630-mm-diameter ball mills working in conjunction with a spiral classifier. The flotation concentration will take place in SF 2.8 and SF 1.2 flotation machines. Several types of magnetic separators (CTB 1018, NCT 0821 and CT 900×1800) will be employed for iron separation. Agitators, cranes, hoist, ceramic filters and various pumps add to the basic equipment inventory.

9.2.2 Description of Concentrator No.2

This concentrator is designed to treat the Cu-Fe ore. Its flowsheet is presented in Figure 9.3. The fine-crushed ore (-12 mm) is ground in a closed ball mill/classification system, to 65% -0.074 mm. The approach here consists of selective copper flotation followed by the rougher bulk zinc-sulfur flotation. The copper rougher concentrate is cleaned three times and the final cleaner concentrate dewatered and stored. The rougher bulk zinc-sulfur concentrate is cleaned twice and then separated into two concentrates i.e. zinc and sulfur. The latter are dewatered and stored. The final flotation tails are subjected to magnetic separation which yields the iron (magnetite) concentrate and the final plant tail.

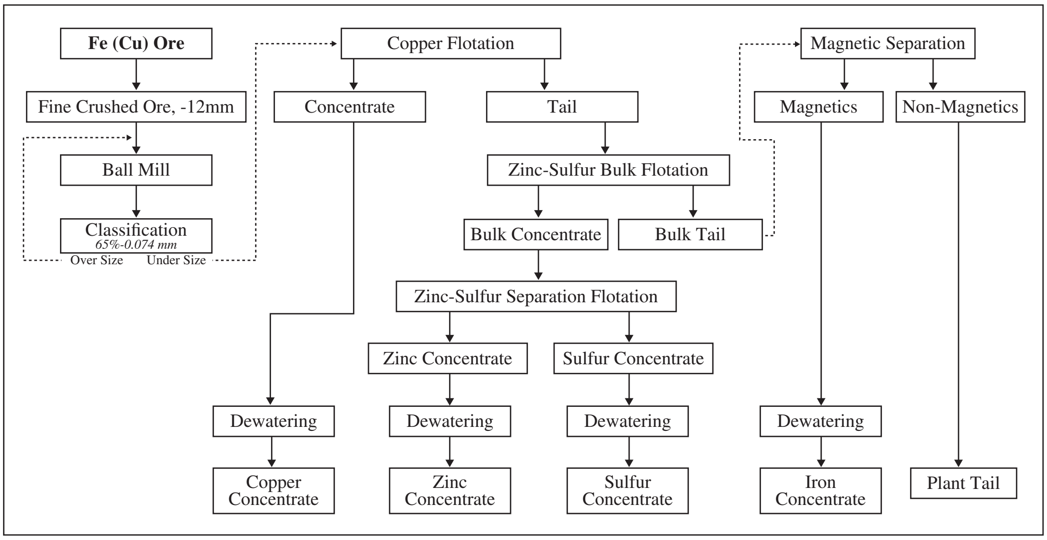

Figure 9.3 Simplified Processing Flowsheet for Concentrator No.2

The processing flowsheets in Figures 9.1, 9.2 and 9.3 are conventional and satisfactory. They are flexible enough to accommodate changes in ore types by changing processing flows and equipment arrangement. The equipment is sturdy, Chinese-made and relatively easy to maintain. The crushing section is designed to work 330 days per year and three 6-hour shifts per day. The other processing units work 330 days per year and in three 8-hour shifts per day. Fresh water, both surface and underground, is abundant. At present most of the fresh processing water comes from the mine. Additional water comes from the nearby Shishui River. The power supply is from the national grid and is sufficient. The tailings are classified, the coarse portion is sent to the mine to be used as backfill and the fines are thickened and sent to tailings storage facility. The thickener overflow is recycled as process water.

9.3 Processing Plant Expansion

The Xinzhuang Mine is undergoing an expansion which will require increasing the processing capacity from 400,000 tpa to 600,000 tpa. This will be achieved by the construction of a new, 200,000-tpa capacity concentrator in close proximity to the two existing plants. The new concentrator will basically process Cu-Fe ore and produce individual copper, sulfur and iron (magnetite) concentrates. The Concentrator No.3 flowsheet is exactly the same as that for Section 2 of Concentrator No.1.

The new concentrator will not have its own crushing/screening plant but will use the excess crushing capacity at Concentrator No.1. The ore will be crushed to -12 mm at Concentrator No.1 crushing section, then conveyed to Concentrator No.3 where the grinding and classification, in closed circuit, will take place. The ground product, sized at 65% -0.074 mm will be pumped to the selective flotation section where copper rougher concentrate followed by the sulfur rougher concentrate will be obtained. These two rougher concentrate will be cleaned and final copper and sulfur concentrates produced. The final flotation tails will be subjected to magnetic separation which will produce magnetite concentrate. The three concentrates will be dewatered and stored. The magnetic separation tails are the final plant tails.

The coarse portion of the tails is to be used for backfill, and the fines will be thickened and sent to a tailing storage facility. The thickener overflow is recycled to the plant as process water.

The major equipment pieces in this concentrator are a 2,736-mm-diameter ball mill, a 2FC20 duplex spiral classifier, nineteen SF8 flotation machines, three SF4 flotation machines and a 6-m thickener. Auxiliary equipment consists of feeders, hoists, belt conveyers, cranes, agitation tanks and pumps.

The equipment is Chinese-made and is expected to perform well. Based on the Company's development plant, Concentrator No.3 will be built in 2013.

10.0 PRODUCTION

Tables 10.1, 10.2 and 10.3 show the historical 2009 to 2011 and forecast 2012 to 2014 concentrator processed ore, concentrator processing recoveries and concentrate production of the Xinzhuang Mine based on the January 2010 Nerin feasibility study report as well as the updated detailed production schedule provided by Yifeng Wanguo.

Table 10.1
Historical and Forecast Concentrator Processed Ore for the Xinzhuang Mine, 2009-2014

	Historical			Forecast		
Item	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Cu-Fe Ore (t)	92,190	99,980	118,470	50,000	100,000	150,000
Cu Grade (%)	1.50	1.40	1.28	0.76	0.76	0.76
TFe Grade (%)	N/A	N/A	N/A	N/A	N/A	N/A
Au Grade (g/t)	0.25	0.23	0.18	0.18	0.18	0.18
Ag Grade (g/t)	12.27	14.20	12.27	12.3	12.3	12.3
Cu Metal (t)	1,387	1,396	1,516	380	760	1,140
TFe Metal (t)	N/A	N/A	N/A	N/A	N/A	N/A
Au Metal (kg)	23.05	23.17	21.32	9.0	18.0	27.0
Ag Metal (kg)	1,131	1,420	1,454	610	1,230	1,840
Fe-Cu Ore (t)	146,190	167,130	154,020	300,000	300,000	300,000
TFe Grade (%)	36.50	34.82	35.50	37.7	37.7	37.7
Cu Grade (%)	0.43	0.33	0.52	0.31	0.31	0.31
Au Grade (g/t)	0.27	0.24	0.17	0.17	0.17	0.17
Ag Grade (g/t)	8.84	14.20	8.18	8.2	8.2	8.2
TFe Metal (t)	53,358	58,188	54,675	113,200	113,200	113,200
Cu Metal (t)	629	558	807	930	930	930
Au Metal (kg)	39.47	40.11	26.18	51.0	51.0	51.0
Ag Metal (kg)	1,292	2,373	1,260	2,450	2,450	2,450

Item	Historical 2009	2010	2011	Forecast 2012	2013	2014
Cu-Pb-Zn Ore (t)	49,110	36,850	83,850	100,000	100,000	150,000
Cu Grade (%)	0.19	0.20	0.57	0.16	0.16	0.16
Pb Grade (%)	0.88	0.50	0.55	0.87	0.87	0.87
Zn Grade (%)	4.81	4.70	3.63	4.59	4.59	4.59
Au Grade (g/t)	0.57	0.57	0.57	0.57	0.57	0.57
Ag Grade (g/t)	51.53	51.52	51.52	52.8	52.8	52.8
Cu Metal (t)	93	74	478	160	160	240
Pb Metal (t)	432	184	461	870	870	1,310
Zn Metal (t)	2,362	1,733	3,044	4,590	4,590	6,890
Au Metal (kg)	27.99	21.00	47.79	57.0	57.0	85.5
Ag Metal (kg)	2,531	1,899	4,320	5,280	5,280	7,920
Total Processed Ore (t)	**287,490**	**303,960**	**356,340**	**450,000**	**500,000**	**600,000**

Note: the historical as well as forecast gold and silver grades for different ore types in the table were estimated based on limited composite assays, and may have a relatively large margin of error.

As shown in Table 10.1, the total processed ore increased gradually from 287,490 t in 2009 to 303,960 t in 2010 and to 356,340 t in 2011. Concentrator production will increase further to 450,000 t in 2012 and 500,000 in 2013 during the mine/plant construction period for the expansion and the full production rate of 600,000 tpa will be reached in 2014 when planned/plant mine expansion is completed. The forecast ore grades are based on the updated reserve estimates. BDASIA notes that the historical mined-out ore from 2009 to 2011 are generally higher in grade than the forecast ore production from 2012 to 2014 in Table 10.1, especially for copper grade in the Cu-Fe ore and Cu-Pb-Zn ore. The Company has advised that the actual mined-out ore grades are generally higher than reserve estimates for the areas mined-out in the last three years. Although the actual production ore grade could also be higher than the reserve estimates for the areas to be mined for the next three years, this trend cannot be guaranteed. Therefore, the forecast ore grades for the next three years are based on the prudent ore reserve estimates and are generally lower than the historical mined-out copper ore grades in the last three years. BDASIA considers that the ore grades for the Xinzhuang Mine are generally in the mediocre range.

BDASIA considers these production targets are achievable provided the planned mine expansion is completed on schedule. BDASIA notes that the planned ore production of 450,000 t in 2012 is more than the combined designed processing capacity of 400,000 tpa of the two existing concentrators. However, based on BDASIA's review of the two concentrators and BDASIA's experiences with similar operations in China, BDASIA considers that the stated designed production capacities are relatively conservative and the two concentrators should have the ability to process 450,000 tpa of ore if the equipment is maintained and managed effectively. The new concentrator to be constructed in the first half of 2013 will be put into production in the second half of that year; therefore, the ore processing target of 500,000 t in 2013 is considered achievable provided that the new concentrator construction is completed on schedule. It should be noted that the total processed ore in Table 10.1 is somewhat different from the total mined-out ore in Table 8.1 for the Xinzhuang Mine from 2009 to 2011 as there is a surface ore stockpile. It is assumed that the surface ore stockpile will be nearly completely consumed by the end of 2011, and therefore, the total processed ore will be very close to the total mined-out ore starting in 2012.

Forecast metallurgical recoveries for copper, iron and zinc in Table 10.2 are generally in line with the historical concentrator performance and the metallurgical test results and are considered reasonable and achievable. As lead was not recovered historically because of the low lead grade in the ore, the forecast lead recovery may need to be proved by actual production. Gold and silver processing recoveries are uncertain for the Xinzhuang Mine as gold and silver grades in the processed ore are not regularly assayed. However, the gold and silver grades in the copper concentrate have been forecasted conservatively compared with the historical gold and silver grades in copper concentrates (Table 10.3).

Table 10.2
Historical and Forecast Concentrator Processing Recoveries for the Xinzhuang Mine, 2009-2014

	Historical			Forecast		
Item	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Cu-Fe Ore						
Cu to Cu Concentrate (%)	87.10	86.10	89.19	86.0	86.0	86.0
TFe to Iron Concentrate (%)	N/A	N/A	N/A	N/A	N/A	N/A
Fe-Cu Ore						
TFe to Iron Concentrate (%)	69.00	69.20	88.28	69.0	69.0	69.0
Cu to Cu Concentrate (%)	84.00	82.19	89.19	82.0	82.0	82.0
Cu-Pb-Zn Ore						
Cu to Cu Concentrate (%)	30.00	30.30	52.01	30.0	30.0	30.0
Pb to Pb Concentrate (%)	–	–	–	65.0	65.0	65.0
Zn to Zn Concentrate (%)	84.00	85.20	89.17	85.0	85.0	85.0

Table 10.3
Historical and Forecast Concentrate Production for the Xinzhuang Mine, 2009-2014

	Historical			Forecast		
Item	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Cu Concentrate (t)	8,142	7,457	11,066	6,020	7,510	9,140
Cu Grade (%)	21.67	22.57	20.97	18.9	19.5	19.9
Au Grade (g/t)	4.27	2.36	4.28	2.3	2.3	2.4
Ag Grade (g/t)	503	458	336	380	360	360
Cu Metal (t)	1,764	1,683	2,321	1,140	1,460	1,820
Au Metal (kg)	34.77	36.99	47.41	13.5	17.1	21.9
Ag Metal (kg)	4,092	3,412	3,719	2,290	2,690	3,270
Fe Concentrate (t)	58,255	63,915	77,889	123,900	123,900	123,900
TFe Grade (%)	63.20	63.00	61.97	63.0	63.0	63.0
TFe Metal (t)	36,817	40,266	48,268	78,100	78,100	78,100

Item	Historical 2009	2010	2011	Forecast 2012	2013	2014
Pb Concentrate (t)	–	–	–	1,410	1,410	2,120
Pb Grade (%)	–	–	–	40.0	40.0	40.0
Au Grade (g/t)	–	–	–	1.6	1.6	1.6
Ag Grade (g/t)	–	–	–	670	670	670
Pb Metal (t)	–	–	–	570	700	850
Au Metal (kg)	–	–	–	2.3	2.8	3.4
Ag Metal (kg)	–	–	–	950	950	1,430
Zn Concentrate (t)	4,159	3,145	5,746	7,800	7,800	11,700
Zn Grade (%)	47.70	46.93	47.23	50.0	50.0	50.0
Zn Metal (t)	1,984	1,476	2,714	3,900	3,900	5,850
S Concentrate (t)	11,153	23,168	64,617	36,300	50,500	69,900
S Grade (%)	39.48	38.00	38.90	40.6	41.5	41.5

BDASIA notes the grade of the concentrates in Table 10.3 is able to meet the customers' requirement in China and no further processing to improve the grade of the concentrates extracted is required before selling to customers. This is supported by that the Xinzhuang Mine has been selling the produced copper, iron, zinc and sulfur concentrates to its customers for a number of years. BDASIA considers that the forecast copper, iron, and zinc concentrate production in Table 10.3 are reasonable and achievable provided the planned mine expansion is completed on schedule. There are some uncertainties with the forecast lead concentrate production but its contribution to the project economics is relatively small.

11.0 OPERATING COSTS

Based on information in the January 2010 Nerin feasibility study and information provided by Yifeng Wanguo, BDASIA has developed historical 2009 to 2011 and forecast 2012 to 2014 unit mining, processing and general and administrative ("G&A") and others costs on a per-tonne basis for ore processed by the concentrators. BDASIA has also calculated a unit copper equivalent ("CuEq") in concentrate operating cash cost and a total production cost (Table 11.1).

The operating cash costs include mining costs, processing costs, general and administrative ("G&A") costs, marketing and transportation costs, environmental protection and monitoring costs, production taxes, resource compensation levy, interests on loans, reserve for reclamation costs, and other cash cost items. The total production costs comprise the operating cash costs and depreciation/amortization costs.

Table 11.1
Historical and Forecast Operating Costs for the Xinzhuang Mine, 2009-2014

Item	Historical 2009	Historical 2010	Historical 2011	Forecast 2012	Forecast 2013	Forecast 2014
Mining Cost						
Contract Ore Mining Cost (RMB/t of milled ore)	136.74	107.10	103.26	103.0	101.0	103.0
Mining Management and Support (RMB/t of milled ore)	36.66	62.91	53.74	54.1	54.0	52.2
Total Mining Cost						
(RMB/t of milled ore)	**173.40**	**170.01**	**157.01**	**157.1**	**155.0**	**155.2**
(US$/t of milled ore)	**27.52**	**26.99**	**24.92**	**24.94**	**24.60**	**24.63**
Concentrating Cost						
Workforce Employment and Transport (RMB/t of milled ore)	5.96	10.12	11.16	10.2	9.2	7.7
Consumables (RMB/t of milled ore)	19.87	26.72	31.33	28.3	28.3	28.3
Fuel, Electricity and Water (RMB/t of milled ore)	23.19	22.75	23.46	21.7	20.0	21.7
Total Concentrating Cost						
(RMB/t of milled ore)	**49.02**	**59.58**	**65.95**	**60.2**	**57.5**	**57.7**
(US$/t of milled ore)	**7.78**	**9.46**	**10.47**	**9.56**	**9.13**	**9.15**
G&A and Others Cost						
On and Off-Site Management (RMB/t of milled ore)	29.27	46.35	80.30	54.1	51.6	48.3
Environmental Protection and Monitoring (RMB/t of milled ore)	0.77	0.81	1.30	0.8	0.8	0.8
Product Marketing and Transport (RMB/t of milled ore)	4.19	8.08	9.67	7.0	6.9	7.1
Non-Income Taxes, Royalties and Governmental Charges (RMB/t of milled ore)	15.19	21.95	35.25	21.7	22.8	21.6
Interest Expense (RMB/t of ore)	6.55	9.01	6.98	7.0	4.2	–
Reserve of Reclamation Costs (RMB/t of ore)	1.03	1.00	0.89	1.0	0.9	0.8
Contingency Allowances (RMB/t of milled ore)	–	–	–	–	–	–
Total G&A and Others Cost						
(RMB/t of milled ore)	**57.00**	**87.20**	**134.38**	**91.6**	**87.2**	**78.5**
(US$/t of milled ore)	**9.05**	**13.84**	**21.33**	**14.54**	**13.84**	**12.46**
Total Operating Cost						
(RMB/t of milled ore)	**279.42**	**316.79**	**357.34**	**308.9**	**299.7**	**291.4**
(US$/t of milled ore)	**44.35**	**50.28**	**56.72**	**49.04**	**47.58**	**46.25**
Total Production Cost						
(RMB/t of milled ore)	**305.27**	**350.16**	**393.75**	**339.31**	**327.05**	**321.04**
(US$/t of milled ore)	**48.46**	**55.58**	**62.50**	**53.86**	**51.91**	**50.96**
CuEq in Concentrate Operating Cost						
(RMB/t)	**22,314**	**24,908**	**23,624**	**28,200**	**27,700**	**26,500**
(US$/t)	**3,542**	**3,954**	**3,750**	**4,480**	**4,400**	**4,210**
CuEq in Concentrate Total Production Cost						
(RMB/t)	**24,379**	**27,531**	**26,031**	**31,000**	**30,300**	**29,200**
(US$/t)	**3,870**	**4,370**	**4,132**	**4,920**	**4,800**	**4,630**

Table 11.1 shows that historical unit mining cost has been decreased, but unit processing and G&A and other costs have generally been increased from 2009 to 2011 when the Xinzhuang Mine maintained a generally stable production rate around the then permitted 300,000 tpa level. The increases in operating costs generally reflect the increases in labor cost, material cost, marketing cost, and non-income taxes in the last three years. However, the decrease in mining cost from 2009 to 2011 reflects the decrease in the amount of non-capitalized development work in the last three years when the production rate was generally consistent.

Forecast unit operating costs for the next three years will generally decrease from the 2011 level when production rate increases gradually from approximately 300,000 tpa in the last three years to 600,000 tpa in 2014, mostly resulted from that some of the cost items are relatively stable when the production rate is doubled from 2011 to 2014. BDASIA believes that the operating cost forecasts are generally reasonable and achievable provided that there are no significant inflation and labor cost increase as inflation factors and cost increase for labors are not considered in the unit operating cost forecast while these factors have contributed significantly for the cost increase for the last three years.

The unit CuEq in concentrate operating costs and total production costs were calculated by converting all other metals in concentrates to CuEq in concentrate based on the sales price ratio of the metal to copper using the following formula:

CuEq = Cu in Cu Concentrate + (Au in Cu Concentrate × Au in Cu Concentrate Price + Ag in Cu Concentrate × Ag in Cu Concentrate Price + Fe Concentrate × Fe Concentrate Price + Pb in Pb Concentrate × Pb in Pb Concentrate Price + Au in Pb Concentrate × Au in Pb Concentrate Price + Ag in Pb Concentrate × Ag in Pb Concentrate Price + Zn in Zn Concentrate × Zn in Zn Concentrate Price + S Concentrate × S Concentrate Price)/Cu in Cu Concentrate Price

The unit CuEq in concentrate operating cost and total production cost presented in Table 11.1 were calculated by dividing the total operating cost and total production cost by the total CuEq in concentrate.

Historical and forecast prices of the metal in concentrate used for the unit CuEq in concentrate operating costs and total production costs are listed in Table 11.2. The forecast prices of the metal in concentrate generally represent the average of the actual prices of the metal in concentrate in the past five years for the Xinzhuang Mine if available or for the market prices in China for the same period.

Table 11.2

Historical and Forecast Metal in Concentrate Prices used for CuEq Calculation

Metal	Historical 2007	2008	2009	2010	2011	Forecast
Cu in Cu Concentrate Price (RMB/t)	50,656	41,373	31,497	41,506	48,661	42,739
Au in Cu Concentrate Price (RMB/kg)	131,586	147,103	172,704	213,533	266,021	186,189
Ag in Cu Concentrate Price (RMB/kg)	2,369	2,222	2,011	2,772	4,600	2,795
Fe Concentrate Price (RMB/t)	467.5	851.2	484.0	820.0	881.0	701
Pb in Pb Concentrate Price (RMB/t)	–	–	–	–	–	14,225
Au in Pb Concentrate Price (RMB/kg)	–	–	–	–	–	187,250
Ag in Pb Concentrate Price (RMB/kg)	–	–	–	–	–	3,817
Zn in Zn Concentrate Price (RMB/t)	18,905	8,948	7,166	9,618	9,145	10,756
S Concentrate Price (RMB/t)	–	505.65	98.26	322.00	408.00	333

It can be noted that the historical unit CuEq in concentrate operating costs and total production costs have generally been in the range of RMB22,300/t to RMB24,900/t and RMB24,400/t to RMB27,500/t, respectively, from 2009 to 2011 when the production rate is relatively stable at the Xinzhuang mine. The forecast CuEq costs are slightly higher than the 2009-2011 costs as the forecast production ore grades are generally lower than the historical production ore grades in the past three years (Table 10.1) although the forecast unit operation costs, which is not related to the ore grade, are generally lower than the historical unit operating costs.

BDASIA notes that the unit CuEq cost depends on a number of factors, including the ore grade and the unit operating costs. The unit CuEq cost is in positive proportion to the unit operating costs, but it is in negative proportion to the ore grade as more ore will be needed to produce a tonne of concentrate with the same metal grades when the ore grades are lower. It is obvious that the forecast lower ore grade for the next three years has a larger influence on the unit CuEq cost than the forecast lower unit operating costs. BDASIA also notes that the selling price of metal contained in concentrate generally should not be lower when the ore grades are lower as the concentrate is sold based on its metal contents, not based on the original ore grades.

12.0 CAPITAL COSTS

Historical capital costs from January 2006 to 2011 and forecast capital costs from 2012 to 2013 for the Xinzhuang Mine are shown in Table 12.1.

Table 12.1
Historical and Forecast Capital Costs for the Xinzhuang Mine, 2006-2013

	Historical						Forecast	
Item	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Capital Cost in RMB×10^3								
Mine	20,163	37,678	5,983	6,404	10,226	7,464	108,600	88,800
Concentrator	6,112	14,453	400	14,555	6,013	149	–	31,900
Administration	1,250	4,870	109	587	8,416	17,937	15,600	1,300
Tailings	2,540	310	–	–	271	887	–	–
Exploration	–	–	–	–	–	–	–	1,000
Land	4,719	39,891	–	47	–	42,013	3,500	–
Closing	–	–	–	–	–	–	–	–
Property Acquisition	12,000	30,269	–	–	–	–	700	9,200
Others	–	–	–	2,911	3,412	384	–	24,800
Total	**46,783**	**127,471**	**6,492**	**24,504**	**28,338**	**68,834**	**128,400**	**157,000**
Capital Cost in US$×$10^3$								
Total	**7,426**	**20,233**	**1,030**	**3,890**	**4,498**	**10,926**	**20,380**	**24,920**

The high historical capital costs in 2006 and 2007 were generally used for the construction and equipment installation for the mine and processing facilities related to the mine expansion to the 200,000 tpa production capacity. Relatively high historical capital costs in 2009 and 2010 were generally used for construction of concentrator No.2, upgrading the mining capacity to 300,000 tpa, and initial costs for constructing the new mine administration building and staff living quarters.

The total capital cost for upgrading the Xinzhuang Mine from approximately 300,000-tpa mining capacity and 400,000-total processing capacity to an overall production capacity of 600,000 tpa capacity, from 2011 to 2013, is estimated at RMB354 M (US$56.2 M). This capital cost estimate is generally based on Nerin's January 2010 feasibility study and updated according to the detailed design for the upgrade. The mine makes up approximately 58% of the overall expansion cost and the process plant 9%. Other major capital cost items for the expansion include constructing the new mine administration building and staff living quarters as well as land acquisition. The total costs include a contingency of 11%.

The total mine expansion capital cost is estimated to be RMB204 M (US$32.5 M), which includes capital expenditures for the development of shafts and haulage levels as well as mine equipment costs, such as shaft hoists, mine diesel equipment, rail haulage equipment and underground pumps. The total concentrator expansion capital cost is estimated to be RMB32 M (US$5.1 M), which is for construction of the new concentrator No.3 in the first half of 2013.

Based on the Nerin feasibility study report, another major capital investment of approximately RMB138 M (US$21.9 M) will be needed in 2023 to develop the mining infrastructure for stage 2 mining below the -315-m MSL elevation and for equipment replacement. The replacement capital may be spread over several years of the operation rather than one distinct amount as forecast but the general amount is considered by BDASIA to be reasonable.

BDASIA considers that the overall capital estimate is generally reasonable for the mine expansion,

13.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT

13.1 Environmental Management

The Xinzhuang Mine management team is complying with Chinese requirements and aspires to achieve a responsible standard of environmental protection. In August 2005, environmental approval for project construction was granted by the Bureau of Environment Protection ("BEP") of the Jiangxi Province. On July 11, 2007, an environmental permit was issued for the operational phase of the project. Environment approval for the current project expansion to the 600,000 tpa production rate was granted on January 9, 2012. The mine has an approved reclamation plan for the mine expansion prepared by the West-Jiangxi Brigade in October 2011 and a security deposit for land reclamation of RMB10.6391 M (approximately US$1.69 M) was assessed by the Department of Land and Resources of Jiangxi Province in December 2010. Yifeng Wanguo has made the payments on time for the security deposit according to the payment schedule specified by the Department of Land and Resources of Jiangxi Province.

The local sub-tropical conditions result in the evaporation rate (1,400 mm per annum) at times being almost as high as the precipitation rate (1,600 mm per annum); however, availability of water is not a problem for the project. This is in large part due to the abundant ground water supply that is pumped daily from the underground workings into a 400-m^3 tank on the surface. Up to 75% of waste water from the processing plant and the TSF system is recycled back to the processing plant's production line. Water consumption for the project is estimated at 3,387 m^3/day, of which 1,434 m^3/day comprises recycled water.

Environment protection measures for the mine site comprise:

- **Water management:** the site has been developed with an emphasis on recycling used process and TSF drainage water, which is recycled to the concentrator for reuse. A recycling rate of up to 75% is obtained. Xinzhuang obtains top-up water from the underground mine workings, while any surplus waste water from the site (including treated sewage) will be discharged to the nearby Shishui River following treatment in accordance with the regulatory standards in China.

- **Solid waste:** underground waste is either left underground or used for construction purposes (as a good quality construction material it is also sold locally). An engineered waste rock dump will be constructed if necessary in the future. A TSF has been constructed in a shallow valley 2.5 km west of the Xinzhuang Mine concentrator to store tailings material (Table 13.1) and a second valley is available at such time as a second TSF is required. In addition, approximately 67% of the tailings (coarse fraction) are mixed with cement and sent underground for use as stope fill.

- **Dust and air quality mitigation:** water sprays will be used for the crushing and screening plant (with wet scrubbers to also be installed in conjunction with the project expansion); however, the ore and concentrates are either wet or damp, thereby requiring minimal dust mitigation measures. Other mitigation measures include enclosure of any potentially dusty activities, paving of surface roads, revegetation and availability of personal protection devices to workers to provide additional personal protection from dust, as required.

- **Noise control:** methods of noise control include use of silencers, noise and vibration dampening, enclosure of noisy equipment, use of insulation and ongoing equipment maintenance.

- **Ground subsidence:** potential subsidence of the karst rock overlying the underground workings is being mitigated by backfilling cemented tailings (the coarse fraction) in abandoned stopes.

- **Environmental monitoring:** a mine site environmental monitoring plan is in place in which analytical results are expected to comply with the regulatory standards in China. The regular company monitoring program is supplemented by random monitoring tests conducted by the EPB.

- **Rehabilitation:** a conceptual mine closure plan comprises part of the Xinzhuang Mine site's soil and water conservation plan.

Table 13.1
Tailings Storage Facility for the Xinzhuang Mine

Design Capacity & Estimated Life	Comments
The design life of the existing TSF can be extended by raising the dam crest from the current 78 m to 87 m, thereby extending the storage capacity to 0.74 Mm^3 representing a production life extension of 4.2 years. This represents an available capacity for 5.5 years production at the expanded production rate from the commencement of 2011 until the TSF is full. Once the TSF is full a new TSF will be constructed in a nearby valley with a proposed storage capacity of almost 1 Mm^3 representing storage capacity for a further production life of 7.8 years. Approval for constructing the new TSF has been granted by relevant government authorities.	The TSF is located 2.5 km west of the concentrator, with a current available storage capacity of around 0.5 Mm^3. The initial stone faced, earth-fill dam wall is 15.5 m high, 3.5 m wide, 110 m long with a dam crest elevation of 78 m. An auxiliary dam has been constructed that will enable a dam crest elevation of 82 m. It is planned to eventually raise the embankment wall to 24.5 m, which will increase the effective storage capacity to 0.74 Mm^3 (adding a further 4.2 years production life at the expanded production rate). The TSF is designed with a 1 in 100 year flood design factor and seismic intensity Level 6 with a basic earthquake acceleration value of 0.05g. Tailings are currently pumped to the TSF with 28% solids in the slurry (this will increase to 50% when the expansion is in place), and when complete the height of the stacked tailings will be 87 m, with an average slope of 1:2.5. The TSF has just a small catchment basin (0.15 km^2), so flooding is not expected to be an issue; however, an overflow pipe is in place (as a long-term measure) which will direct any excess water away from the TSF. This flood discharging system enables any discharge water to have a 4 hours residence time prior to discharge to allow for settlement. The drainage system installed at the base of the tailings pile directs seepage water into a seepage collection system. The water is collected, treated and recycled through the processing plant. A second TSF for future use has been designated in a valley near the existing TSF which will provide a total storage capacity of approximately 1 Mm^3 (almost 8 years of estimated production life at the expanded production rate). When the existing TSF is full it will be topsoiled and revegetated.

13.2 Social Management

Prior to mining operations being established in the area in 2004, the minesite area was used for rice growing. Land was acquired for the minesite and associated infrastructure in compliance with PRC law, approved by the local government authorities. Compensation for land and land use rights was negotiated in line with standard PRC guidelines.

The community has, in general, welcomed the mine development due to the new opportunities for employment in the area (Yifeng Wanguo employs approximately 60 permanent local mine workers and additional construction and casual workers); the provision of tax revenues to local government that has assisted local infrastructure development; and also the support to local economic development through the generation of increased local consumption demand.

14.0 OCCUPATIONAL HEALTH AND SAFETY

The Xinzhuang Mine has been operating since December 2006, and is conducting its operations in accordance with specific national laws and regulations covering occupational health and safety ("OH&S") in construction, mining, underground mining, production blasting and explosives handling, mineral processing, TSF design, hazardous wastes, environmental noise, fire protection and fire extinguishment, sanitary provisions, power provision, lightning and seismic protection, labor and supervision.

To manage the health and safety of the workforce the mine is implementing OH&S procedures in line with national standards, with initial medical checks (including medical check in respect of silicosis) for all employees and ongoing checks for potentially affected employees. There is a part time medical clinic on site with one doctor and one nurse, and in addition the nearby local Community Hospital serves the mine community. Safety statistics for the mine to date show a record of no significant injuries. An emergency response plan is in place for the management of chemical spills, floods, fires, etc.

The mine holds a current safety permit issued by the Jiangxi Safety Bureau for both the mine and the TSF, issued August 30, 2010 and valid for 3 years. The safety permit is extendable thereafter. Once the mine expansion construction is completed, the Xinzhuang Mine will apply for the safety permit for the new production system.

BDASIA was advised by Yifeng Wanguo that the Xinzhuang Mine's mine safety permit was temporally seized by the Jiangxi Safety Bureau and ore mining was suspended on July 30, 2008 because of incomplete backfill system and ventilation system. After completing the backfill system and ventilation system, the mine safety permit was returned to the Xinzhuang Mine and ore mining resumed in April 2009. The Xinzhuang Mine has been maintaining a valid mine safety permit since April 2009.

15.0 RISK ANALYSIS

When compared with many industrial and commercial operations, mining is a relatively high-risk business. Each mineralized body is unique. The nature of the mineralized body, the occurrence and grade of the mineralization, and its behavior during mining and processing can never be accurately predicted.

Estimations of the tonnes, grade, and overall metal content of a deposit are not precise calculations but are based on interpretation and on samples from drilling or channel sampling, which, even at close sample spacing, remain very small samples of the entire mineralized body. There is always a potential error in the projection of sampling data when estimating the tonnes and grade of the surrounding rock, and significant variations may occur. Reconciliations of past production and ore reserve estimates can confirm the reasonableness of past estimates but cannot categorically confirm the accuracy of future predictions.

Estimations of project capital and operating costs are rarely more accurate than ±10% and will be at least ±15% for projects in the planning stages. Mining project revenues are subject to variations in metal prices and exchange rates, though some of this uncertainty can be removed with hedging programs and long-term contracts.

Yifeng Wanguo's Xinzhuang Mine reviewed in this CPR has been in operation for over 4 years and the risks are reduced by the knowledge and experience gained from the ongoing operations. The long-term production projections are largely based on recent production and planned expansion. Forecast cost parameters are considered generally reasonable.

In reviewing the Xinzhuang Mine, BDASIA has considered areas where there is perceived technical risk to the operation, particularly where the risk component could materially impact the projected production and resulting cash flows. The assessment is necessarily subjective and qualitative. Risks have been classified as low, moderate, or high based on the following definitions:

- High Risk: the factor poses an immediate danger of a failure, which if uncorrected, could have a material impact (>15%) on the project cash flow and performance and could potentially lead to project failure.
- Moderate Risk: the factor, if uncorrected, could have a significant impact (>10%) on the project cash flow and performance unless mitigated by some corrective action.
- Low Risk: the factor, if uncorrected, could have little or no effect on project cash flow and performance.

Risk Component	**Comments**
Mineral Resources *Low to moderate Risk*	The Xinzhuang copper-polymetallic deposit is a porphyry-skarn-hydrothermal deposit related to the Yanshanian granites; it consists primarily of large irregularly-stratiform and lenticular mineralized bodies controlled by the granite intrusive contact. The primary mineralized bodies are generally hundreds to over one thousand of meters in dimension along the strike and dip directions with reasonably good spacial and grade continuity. The current mineral resources of the deposit were estimated by a polygonal method using drill hole and underground channel samples. The Measured resource was estimated by drilling and underground channel sampling at a data spacing no more than 70 m by 50 m and the Indicated resource was estimated by a data spacing of no more than 150 m by 100 m. The Inferred resource was also estimated reasonably by using a data spacing of no more than 200 m by 150 m. The Xinzhuang Mine has been in production since the end of 2006, and the resource estimates for the mine have generally been supported by the mining operation, although detailed production reconciliation data is currently unavailable.

Risk Component	Comments
Ore Reserves *Low to moderate Risk*	Proved and Probable ore reserves under the JORC Code have been defined for the Xinzhuang Mine by Nerin in a feasibility study report based on the Measured and Indicated resource estimates, respectively. The planned mining method is cut-and-fill. A mining dilution factor of 7.2% and a mining recovery factor of 80% were utilized in reserve estimation, which BDASIA considers appropriate and perhaps slightly conservative for the selected mining method. The currently defined reserves are sufficient to support mining operations at an expanded production rate of 600,000 tpa for more than 30 years.
Underground Mining *Low to moderate Risk*	Given the good ground conditions and the use of cut-and-fill mining method the mining risk is considered low except for the issue of water. There is a significant risk to the underground operation from increasing ingress of water as the operation becomes deeper. Yifeng Wanguo has several risk mitigating measures in place such as the grout curtain, filling of stopes with cemented fill to protect the hanging wall, installing excessive underground pumping capacity and starting mining the deposit 115-120 m below the surface. However, BDASIA believes that the issue of water still brings a low to moderate risk for the underground mining operation and special attention should be paid to this issue at all times of the underground mining operation.
Mineral Processing *Low Risk*	The test work on the future concentrator feeds was well done. The design of the process and the processing facilities is competent. The metallurgical recoveries in past production are satisfactory. BDASIA considers that the technological and economic performance of all three plants will be as forecast or very close to it.
Infrastructure *Low Risk*	Access to the Xinzhuang Mine is excellent. Power supply for current mining operation has been established for several years. An additional power-transmission line will need to be constructed for the planned expansion. Power supply is generally sufficient for the operation at the expanded level. Water supply is abundant.

Risk Component	Comments
Production Targets *Moderate Risk*	The underground production targets for the expanded production are reasonable once the expansion has been implemented. The 2012 production target of 450,000 t of ore will also depends on maintaining and managing the equipment effectively in the two existing concentrators. A significant risk to production is considered to be the ability to ensure dewatering of the mine remains ahead of stope production. Several mitigating factors are in place but the risk remains. Concentrator production targets should be achievable provided that construction of the new concentrator is completed as scheduled in the first half of 2013.
Operating Cost *Moderate Risk*	Forecast unit operating costs are generally decreasing from recent actual operating costs when the production increases in the next three years at the Xinzhuang Mine. The changeover to diesel powered equipment and increased mechanization of the mine has potential to increase costs during commissioning of the new equipment and establishing maintenance schedules. BDASIA notes that forecast labor and material costs are generally kept constant at the 2011 level. However, costs have potential to escalate given the level of growth within China.
Capital Cost *Low to Moderate Risk*	Nerin's estimate of amount of capital equipment to increase production capacity is reasonably calculated; mine level development plans reflect the current reserve and are appropriate. Costs have potential to escalate given the level of growth within China.
Environmental and Social Management *Low Risk*	Mitigation measures are in place to reduce environmental risks and to ensure regulatory environmental requirements are satisfied. Existing risks will be further reduced when the environment measures associated with the mine expansion program are installed. Ongoing dialogue is maintained between Yifeng Wanguo, the local government and local residents with the objective of maintaining good community relations. All structures and infrastructure, including the TSF, are designed to withstand a 1 in 100-year flood event and a Level 6 seismic event with an acceleration value of 0.05 g.
Occupational Health and Safety *Low Risk*	Yifeng Wanguo conducts its operations in accordance with the national safety standards and has maintained a good safety record to date.