

**IVANHOE MINES LTD.**

Revised  
Annual Information Form

FOR THE YEAR ENDED  
DECEMBER 31, 2001

DATED MAY 16, 2002



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## Forward-Looking Statements

Certain statements contained in this Annual Information Form respecting reserves, resources, plans, objectives and future performance of Ivanhoe' business are forward-looking statements. Forward-looking statements generally can be identified by the use of forward-looking terminology such as "may", "will", "expect", "intend", "estimate", "anticipate", "believe", or "continue" or the negative thereof or variations thereon or similar terminology. These forward-looking statements involve risks and uncertainties relating to, among other things, changes in commodity prices, unanticipated reserve and resource grades, geological, metallurgical, processing, transportation, infrastructure and other problems, results of exploration activities, cost overruns, availability of materials and equipment, timeliness of government approvals, political risk and related economic risk, actual performance of plant, equipment and processes relative to specifications and expectations and unanticipated environmental impacts on operations. Actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to, those set forth herein under "Risk Factors".

## Currency and Exchange Rates

In this Annual Information Form, all funds are quoted in United States dollars unless otherwise indicated. References to "\$" are to United States dollars, references to "Cdn.\$" are to Canadian dollars and references to "AUD\$" are to Australian dollars. The Bank of Canada noon buying rates for the purchase of one United States dollar using Canadian dollars were as follows during the indicated periods:

(Stated in Canadian dollars)

	<b>Year Ended December 31</b>				
	<b>2001</b>	<b>2000</b>	<b>1999</b>	<b>1998</b>	<b>1997</b>
End of period	1.5928	1.4995	1.4440	1.5333	1.4291
High for the period	1.6052	1.5601	1.5302	1.5225	1.4292
Low for the period	1.4901	1.4349	1.4440	1.5544	1.3368
Average for the period	1.5484	1.4859	1.4858	1.4831	1.3846

The Bank of Canada noon buying rate on May 15, 2002 for the purchase of one United States dollar using Canadian dollars was Cdn.\$1.5559 (one Canadian dollar on that date equalled US\$0.6427).

The Bank of Canada noon buying rate on December 31, 2001 and May 15, 2002, respectively, for the purchase of one United States dollar using Australian dollars was AUD\$1.95 and AUD\$1.82 (one Australian dollar on those dates equalled US\$0.51 and US\$0.5486, respectively).

## Conversion Factors

For ease of reference, the following conversion factors are provided:

<u>Imperial Measure</u>	=	<u>Metric Unit</u>	<u>Metric Unit</u>	=	<u>Imperial Measure</u>
2.47 acres		1 hectare	0.4047 hectares		1 acre
3.28 feet		1 metre	0.3048 metres		1 foot
0.62 miles		1 kilometre	1.609 kilometres		1 mile
0.032 ounces (troy)		1 gram	31.1 grams		1 ounce (troy)
2.205 pounds		1 kilogram	0.454 kilograms		1 pound
1.102 tons (short)		1 tonne	0.907 tonnes		1 ton
0.029 ounces (troy)/ton		1 gram/tonne	34.28 grams/tonne		1 ounce (troy)/ton

## Glossary of Geological and Mining Terms

**breccia:** rock consisting of fragments, more or less angular, in a matrix of finer-grained material or of cementing material.

**breccia pipe:** a pipe or funnel shaped structure filled with angular fragments held together with a fine grained cement. The feature may be formed in a variety of different ways. It is likely to be a hydrothermal or explosion-induced pipe in which fluids have deposited ore-forming minerals.

**carbonaceous:** containing carbon or coal, especially shale or other rock containing small particles of carbon distributed throughout the whole mass.

**concentrate:** a product containing the valuable metal and from which most of the waste material in the ore has been eliminated.

**concentrator:** a plant for recovery of valuable minerals from ore in the form of concentrate. The concentrate must then be treated in some other type of plant, such as a smelter, to effect recovery of the pure metal.

**cut-off grade:** the lowest grade of mineral resources considered economic; used in the calculation of reserves and resources in a given deposit.

**dilution:** an estimate of the amount of waste or low-grade mineralized rock which will be mined with the ore as part of normal mining practices in extracting an orebody.

**diorite:** a granular, crystalline igneous rock commonly of acid plagioclase and hornblende, pyroxene or biotite.

**electrowinning:** recovery of a metal from an ore by means of electro-chemical processes.

**flotation:** a milling process by which some mineral particles are induced to become attached to bubbles of froth and float, and others to sink, so that the valuable minerals are concentrated and separated from the gangue.

**fold:** a curve or bend of a planar structure such as a rock bed or a fault plane. The result of deformation processes in the earth's crust.

**footwall:** the mass of rock beneath a geological structure (orebody, fault, etc.).

**gangue:** valueless rock or mineral material in ore.

**granodiorite:** a plutonic rock consisting of quartz, calcic oligoclase or andesine and orthoclase with biotite, hornblende or pyroxene as mafic constituents.

**gravity concentration:** a metallurgical process that separates metals from gangue using the specific gravity differential between the metal and the gangue.

**greenstone:** a metamorphic (cooked) rock whose green colour is due to the presence of chlorite, epidote or actinolite. Commonly a loose term used to describe deformed, recrystallized volcanic and/or sedimentary rock which has a high amphibole content as a result of its original bulk composition.

**hanging wall:** the mass of rock above a geological structure (orebody, fault, etc.).

**hypogene:** primary mineralization formed by mineralizing solutions emanating up from a deep magmatic source.

**igneous rock:** rock which is magmatic in origin.

**indicated mineral resource:** that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and test information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

**inferred mineral resource:** that part of a mineral resource for which the quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

**intrusive:** rock which while molten, penetrated into or between other rocks but solidified before reaching the surface.

**kriged resource:** resource grades estimated using weighted averages of the surrounding samples. The weights are based on the mineralization's spatial continuity which has been statistically quantified beforehand.

**leach/heap leach:** to dissolve minerals or metals out of ore with chemicals. Heap leaching copper involves the percolation of a cyanide solution through crushed ore heaped on an impervious pad or base.

**measured mineral resource:** that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration,

sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

**mineral resource (deposit):** a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a mineral resource (deposit) are known, estimated or interpreted from specific geological evidence and knowledge.

**ore reserve:** the economically mineable part of a measured or indicated mineral resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. An ore reserve includes diluting materials and allowances for losses that may occur when the material is mined.

**porphyry:** any igneous rock in which relatively large, conspicuous crystals (called phenocrysts) are set in a fine-grained ground mass.

**porphyry dykes:** a tabular body of igneous rock that cuts across the structure of adjacent rocks, and contains conspicuous phenocryst in a fine grained or aphanites ground mass.

**probable ore reserve:** the economically mineable part of an indicated and, in some circumstances, a measured mineral resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

**proterozoic rock:** a rock of Proterozoic age, the younger of two Precambrian eons.

**proven ore reserve:** the economically mineable part of a measured mineral resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

**qualified person:** an individual who: (a) is an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these; (b) has experience relevant to the subject matter of the mineral project; and (c) is a member in good standing of a professional association as defined by National Instrument 43-101 of the Canadian Securities Administrators.

**schist:** a strongly foliated crystalline rock which readily splits into sheets or slabs as a result of the planar alignment of the constituent crystals. The constituent minerals are commonly specified (e.g. "quartz-muscovite-chlorite schist").

**shear zone:** a tabular zone of rock which has been crushed and brecciated by parallel fractures due to "shearing" along a fault or zone of weakness. These can be mineralized with ore-forming solutions.

**strike:** the direction, or course or bearing, of a vein or rock formation measured on a level surface.

**strip (or stripping) ratio:** the tonnage or volume of waste material which must be removed to allow the mining of one tonne of ore in an open pit.

**sulphides:** compounds of sulphur with other metallic elements.

**supergene:** ore or ore minerals that have been formed by the effects (usually oxidization and secondary sulphide enrichment) produced by descending ground water.

**SX-EW processing:** solvent extraction and electrowinning processing. Recovery of a metal from an ore by means of acid leaching and organic extraction, combined with electro-chemical processes.

**tailing:** material rejected from a mill after the recoverable valuable minerals have been extracted.

**vein:** sheet-like body of minerals formed by fracture filling or replacement of host rock.

**vug:** small cavity in vein or rock usually lined with crystals.

## **ITEM 2: CORPORATE STRUCTURE**

### **Name and Incorporation**

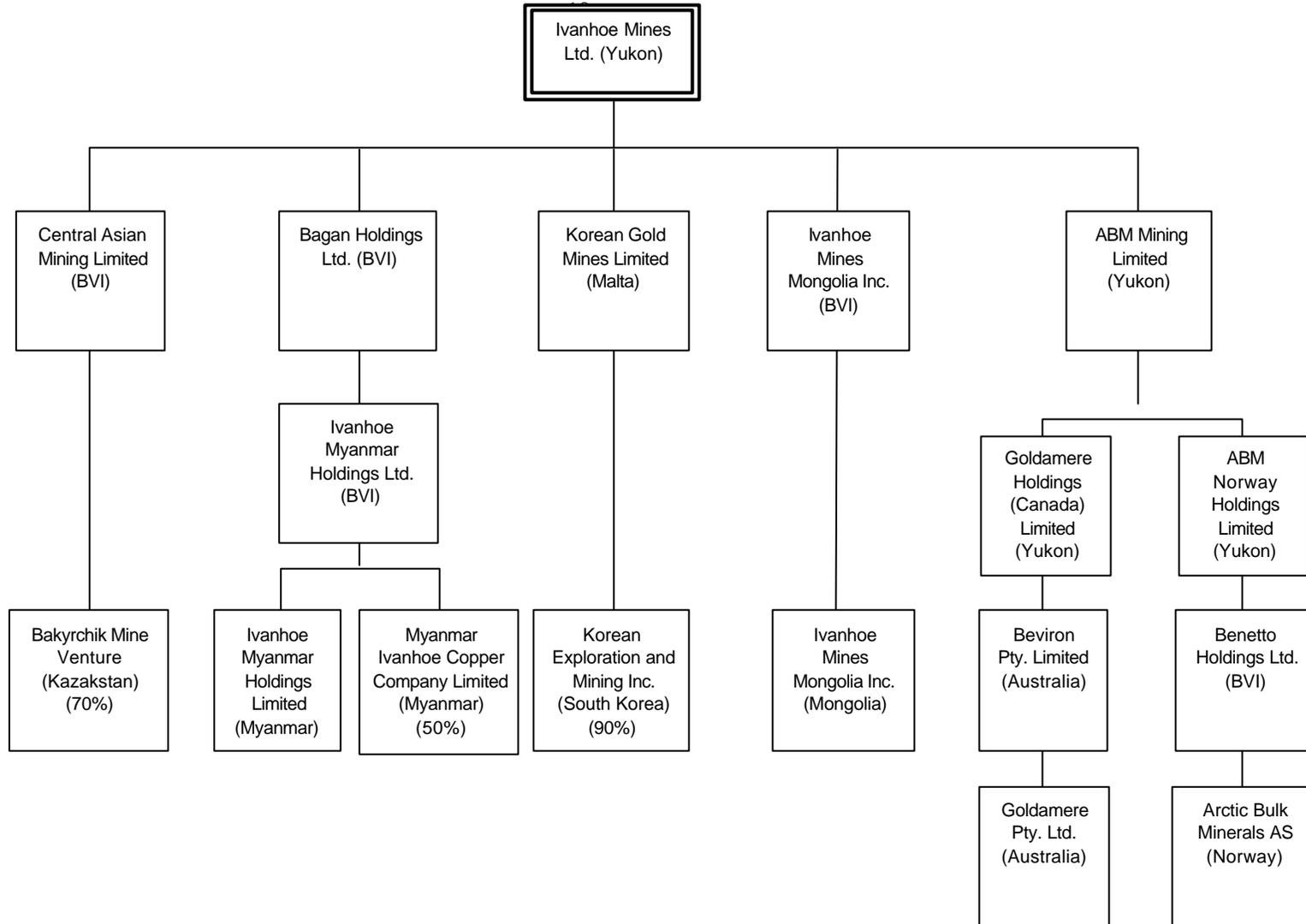
Ivanhoe Mines Ltd. (“Ivanhoe” or the “Corporation”) was incorporated under the *Company Act* (British Columbia) on January 25, 1994 under the name 463212 B.C. Ltd. In February, 1994 the Corporation changed its name to Indochina Goldfields Ltd. In March, 1994 the Corporation increased its authorized capital from 10,000 common shares without par value to 100,000,000 common shares without par value and created 100,000,000 preferred shares without par value. In February, 1995 the Corporation was continued under the *Business Corporations Act* (Yukon). In July, 1997 the Corporation increased its authorized capital to an unlimited number of common shares without par value and an unlimited number of preferred shares without par value. In June, 1999 the Corporation changed its name to Ivanhoe Mines Ltd.

The Corporation’s North American headquarters are located at 654, 999 Canada Place, Vancouver, British Columbia, Canada, V6C 3E1. The Corporation’s Asian headquarters are located at 37th Floor #2, Millenia Tower, 1 Temasek Avenue, Singapore 039192. The Corporation’s registered office is located at Suite 300, 204 Black Street, Whitehorse, Yukon, Canada, Y1A 2M9.

### **Subsidiaries and Management Structure**

In this Annual Information Form, the “Ivanhoe Group” or the “Group” means, collectively, the Corporation and its subsidiaries or a particular subsidiary or group of subsidiaries, as the context requires. The corporate structure of the Corporation, its active subsidiaries, the percentage ownership in subsidiaries which are not wholly-owned by the Corporation and the jurisdiction of incorporation of such corporations as at December 31, 2001 are set out in the following chart.

# IVANHOE MINES LTD. – CORPORATE STRUCTURE



Note: All subsidiaries are wholly-owned unless otherwise indicated  
 "BVI" means British Virgin Islands



### **ITEM 3: GENERAL DEVELOPMENT OF THE BUSINESS**

#### **Overview**

Ivanhoe is an international mineral exploration and development company. The Ivanhoe Group holds interests in mineral resource properties in Mongolia, Myanmar, Australia, South Korea, Norway, Kazakhstan and Vietnam. The Ivanhoe Group also holds investments in Resource Investment Trust Plc., a company listed on the London Stock Exchange, Emperor Mines Limited, a company listed on the Australian Stock Exchange, Olympus Pacific Minerals Inc., a company listed on the TSX Venture Exchange and Intec Ltd., a company listed on the Australian Stock Exchange.

The Ivanhoe Group's principal mineral resource properties are the Oyu Tolgoi gold and copper exploration project (the "Oyu Tolgoi Project") in Mongolia, the Monywa copper project (the "Monywa Copper Project") in Myanmar and the Savage River iron ore mine (the "Savage River Project") in Tasmania, Australia. The Ivanhoe Group holds a 100% interest in the Oyu Tolgoi Project and the Savage River Project and a 50% interest in the Monywa Copper Project.

#### **History**

In June, 1996, the Corporation completed an initial public offering of its common shares from which it realized net proceeds of approximately Cdn.\$250 million. The Corporation also listed its common shares on the Toronto Stock Exchange (the "TSX"). Throughout 1996, the Ivanhoe Group was principally engaged in developing the first phase of the Monywa Copper Project and exploring for gold in Indonesia and elsewhere in Southeast Asia.

In late 1996 the Group acquired an equity interest in Bakyrchik Gold Plc. (now GTL Resources Plc.), a London based gold exploration and development company engaged in a joint venture with the government of Kazakhstan to develop the Bakyrchik gold mine in northeast Kazakhstan. Through a series of transactions in 1997 and 1999, the Corporation acquired a 70% interest in the Bakyrchik gold project at an aggregate acquisition cost of approximately \$65 million.

In late 1997, the Group began construction of the S&K Mine, the first phase of development of the Monywa Copper Project. In late 1998, following a \$140 million development and construction program, the S&K Mine commenced production of cathode copper at a rate of approximately 25,000 tonnes per annum.

A severe economic crisis in Southeast Asia coupled with a dramatic decline in the price of gold in 1998 adversely affected the economics of the Bakyrchik gold project and the Group postponed its development plans and placed the project on care and maintenance, curtailing further development expenditures. In the fall of 2001, the Group restarted limited production of stockpiled oxide ore deposits on the property, but currently has no plans to commence full-scale production. The Group also significantly scaled back its exploration programs, particularly in Indonesia where serious political and social unrest hampered the Group's ability to carry out exploration activities.

In response to these changing circumstances, the Corporation implemented measures to conserve its financial resources and, in late 1998 and early 1999, began to consider various potential asset acquisition and merger opportunities as strategic alternatives to diversify its geographic and commodity focus. The Corporation's primary objective was to place greater emphasis on establishing additional production and

increasing cash flow and less emphasis on exploration. In keeping with this new strategy, the Group curtailed most of its exploration activities other than those in Mongolia, South Korea and Myanmar.

In May, 2000, Ivanhoe entered into an earn-in agreement with BHP Minerals International Exploration Inc. ("BHP Exploration") to earn a 100% interest in the Oyu Tolgoi Project in Mongolia and, in 2001, encountered encouraging drill results at Oyu Tolgoi for gold and copper mineralization. Accordingly, the Ivanhoe Group commenced a substantial exploration program in Mongolia, focussing in particular on the Oyu Tolgoi Project. The Group continues to actively explore the property for gold, copper and molybdenum resources.

In December, 2000, the Corporation acquired all of the issued and outstanding shares of ABM Mining Limited ("ABM") by issuing 50,322,533 common shares of the Corporation to the shareholders of ABM. ABM owns and operates the Savage River Project in Tasmania, Australia and the inactive Bjornevatn iron ore mine in Kirkenes, Norway. The Savage River Project was adversely affected in 2001 by a downturn in the global steel industry. The resulting decline in demand for iron ore pellets contributed to a \$54 million write down in the value of its assets. In 2001, ABM also commenced negotiations with its existing project lenders with a view to restructuring the Savage River Project's finances. For a description see the Management Discussion and Analysis of Financial Condition and Results of Operations" (the "MD&A") which accompanies the Corporation's comparative consolidated financial statements for the years ended December 31, 2001 and 2000.

## **ITEM 4 – NARRATIVE DESCRIPTION OF BUSINESS**

### **Overview**

For the purposes of Form 44-101F1 under National Instrument 44-101 of the Canadian Securities Administrators, the Oyu Tolgoi Project, the Monywa Copper Project and the Savage River Project have been identified as the mineral properties which are material to the Ivanhoe Group. None of the Group's other mineral property interests are considered material for the purposes of Form 44-101F1 insofar as none of them represents 10% or more of the book value, as of December 31, 2001, of the total of the Ivanhoe Group's mineral resource property interests and related plant and equipment.

### **Qualified Persons**

The bulk of the disclosure of a scientific or technical nature in this Annual Information Form respecting the Oyu Tolgoi Project is based upon and summarized from a technical report dated January 11, 2002 prepared by D. George Cargill, Ph.D., P. Eng. of Roscoe Postle Associates Inc. ("RPA") as amended March 9, 2002 by Gildar J. Arseneau, Ph.D., P. Geo. of RPA (the "Roscoe Postle Report"). All disclosure of a scientific or technical nature in this Annual Information respecting the Group's Mongolian properties which was not based upon and summarized from the Roscoe Postle Report was prepared by or under the supervision of Mr. Charles P.N. Forster, P. Geo. Mr. Forster is an employee of Ivanhoe. Messrs. Cargill, Arseneau and Forster are all "qualified persons" under National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101").

All disclosure of a scientific or technical nature in this Annual Information Form respecting the Monywa Copper Project, the Bakyrchik gold project and the Ivanhoe Group's mineral properties in Myanmar, South Korea and Vietnam was prepared by, or under the supervision of, James Currie, P.Eng. Mr. Currie is an employee of Ivanhoe and a "qualified person" under NI 43-101.

All disclosure of a scientific or technical nature in this Annual Information Form respecting the Savage River Project was prepared under the supervision of Mr. Anson Griffith, MAusIMM, an employee of ABM. Mr. Griffith is a “qualified person” under NI 43-101.

## **Oyu Tolgoi Gold and Copper Project, Mongolia**

### ***Project Description and Location***

Ivanhoe is conducting a series of exploration programs at Oyu Tolgoi in the south Gobi Region of Mongolia through its wholly-owned subsidiary, Ivanhoe Mines Mongolia Inc. The objective of these programs is to define the nature and scope of a recently discovered copper and gold porphyry zone containing an, as yet, indeterminate amount of gold, copper and molybdenum mineralization. Mineralization has been identified in four areas of the Oyu Tolgoi Project, within an area of 3 kilometres north-south by 2 kilometres east-west, designated by Ivanhoe as the Central Oyu, North Oyu, South Oyu and Southwest Oyu zones. The right to explore for minerals in these zones is held through four non-contiguous mineral licences encompassing approximately 24,000 hectares of surface area.

In May 2000, Ivanhoe entered into an earn-in agreement (the “Earn-in Agreement”) with BHP Exploration to earn a 100% interest in the Oyu Tolgoi property. Ivanhoe earned its 100% interest in February, 2002 by incurring US\$3,000,000 in exploration expenditures, paying to BHP Exploration \$1,000,000 and delivering to BHP Exploration a \$4,000,000 non-interest bearing promissory note with a one year term. The Earn-in Agreement also requires Ivanhoe to incur additional exploration expenditures of \$3,000,000 by February, 2006. BHP Exploration retains a 2% net smelter returns royalty and certain back-in rights.

BHP Exploration’s back-in rights become exercisable if, on or before June 7, 2002, a “significant mineral occurrence” is identified on the property consisting of not less than 250,000,000 tonnes of 1% copper extractable by heap leaching and SX-EW processing. In that event, BHP Exploration has the right to re-purchase a 40% interest in the significant mineral occurrence. If the significant mineral occurrence consists of not less than 300,000,000 tonnes of ore grading 1% copper recoverable by conventional means of extraction, BHP Exploration has the right to re-purchase a 60% interest in the significant mineral occurrence.

If BHP Exploration exercises the back-in right, it will be required to relinquish its royalty and pay to Ivanhoe an amount equal to three times the amount of exploration expenditures incurred. If the significant mineral occurrence lies within the “Central Oyu” zone, BHP Exploration must also repay to Ivanhoe the \$5,000,000 paid by Ivanhoe to BHP Exploration to exercise the option. If BHP Exploration were to exercise its back-in rights, BHP Exploration and Ivanhoe would form a joint venture in which the party with the larger participating interest would be entitled to be the operator. Ongoing expenditure obligations for exploration and development would be in proportion to each party’s participation in the joint venture.

In April, 2002, Ivanhoe notified BHP Exploration that it had completed the additional \$3,000,000 expenditure program required under the Earn-in Agreement. BHP Exploration’s back-in right expires on June 7, 2002.

The original exploration licence for the Oyu Tolgoi Project was granted to BHP Exploration in 1997 as Mineral Exploration Licence (“MEL”) 210. MEL 210 was later re-designated as MEL 66X when new mining legislation was enacted in Mongolia in 1997. Certain areas originally covered by MEL 66X were

relinquished in September, 2000, and MEL 66X was converted into four separate licences, MELs 66X, 66X1, 66X2 and 66X3. The licences, which expire on February 17, 2004, permit Ivanhoe to conduct drilling and other exploration work on the property. Ivanhoe must pay a yearly per hectare fee to the Mongolian government in order to maintain the licences in good standing. If Ivanhoe intends to commence mining activity on the property, it must apply to the Mongolian government for a mining licence prior to the expiry of the corresponding MEL. Mining licences are typically granted for a term of 60 years, and are renewable for up to an additional 40 years. The Mongolian government also imposes a royalty of 2.5% on the sale value of all minerals mined in the country.

Ivanhoe also recently acquired MEL 3677, which is adjacent to the other MELs and covers an additional 109,145 hectares of land located in the same geological province that hosts the Oyu Tolgoi Project. MEL 3677 has an initial term of three years, and is renewable for two additional extensions totalling four years. 59,743 hectares of MEL 3677 overlap areas originally covered by MEL 66X.

### ***Accessibility, Climate, Local Resources and Physiography***

The Oyu Tolgoi Project is located in the south Gobi Region of Mongolia, approximately 560 kilometres south of the capital city, Ulaanbaatar. Road access to the property follows a well-defined track directly south from Ulaanbaatar requiring 12 hours travel time in a four-wheel drive vehicle. Ivanhoe has also constructed a 1,400 metre airstrip which allows the property to be reached by small aircraft. Mongolian rail service and a large electric power line lie 350 kilometres east of the property at the main rail line between Ulaanbaatar and China. The China-Mongolia border is located approximately 80 kilometres south of Oyu Tolgoi and the Trans-China Rail line following the Yellow River is approximately 160 kilometres south of the border.

A small diesel power station is located 60 kilometres east in Handbogd. The nearest significant population centre is the regional provincial capital at Dalanzadgad, located 240 kilometres west northwest of Oyu Tolgoi with a population of approximately 12,500 people. Dalanzadgad is accessible by unpaved road.

Although the climate at Oyu Tolgoi is relatively severe, including frequent strong wind conditions and cold winters with temperatures ranging between  $-2$  degrees to  $-30$  degrees Celsius, Ivanhoe believes that it is possible to conduct exploration and mining operations on a year round basis.

The property has an average elevation of 1,160 metres above sea level, and has a relatively flat, undulating topography with less than 50 metres of relief. The surface area is a semi-desert steppe, with minimal rainfall and vegetation cover of approximately 20 to 25% of the ground surface.

Ivanhoe's surface rights on the Oyu Tolgoi Project are governed by the Minerals Law and the Land Law. Water rights are governed by the Water Law and the Minerals Law. These laws permit Ivanhoe to use the land and water in connection with exploration operations, subject to the discretionary authority of Mongolian national, provincial and regional governmental authorities. Ivanhoe expects that it will have to negotiate with all three levels of government to ensure access to appropriate land and water rights prior to the commencement of any mining operations.

Power and water sources are currently sufficient for exploration activities. However, additional power and water sources will need to be developed prior to the commencement of mining operations. The nearest power line is 350 kilometres away. Water is typically drawn from underground aquifers in the area. Ivanhoe has not analyzed the sufficiency of such water sources for production purposes.

The area is relatively flat, and should be amenable to the construction of the necessary infrastructure for a mining operation, including tailings storage sites, heap leach pads, waste disposal and processing plant sites.

### ***History***

Old diggings and small amounts of slag found in the area indicate that the Oyu Tolgoi area was subject to small scale mining activity in ancient times. However, modern mineral exploration did not commence in the area until 1995, when the Magma Copper Company Ltd. (“Magma”) began a reconnaissance program which examined more than 60 copper occurrences in various parts of Mongolia. In 1996, after BHP Exploration acquired Magma, BHP Exploration continued the reconnaissance program in western and southern Mongolia.

BHP Exploration first visited the Oyu Tolgoi Project in September, 1996 as part of its regional reconnaissance program of the south Gobi region. BHP Exploration subsequently applied for, and was granted, an exploration concession covering 1,350 square kilometres. After geological mapping, stream and soil sediment surveys and magnetic and induced polarization (“IP”) surveys, BHP Exploration completed 6 diamond core holes totalling 1,000 metres during September and October, 1997. With encouraging results from two of the holes, a second phase of drilling was undertaken in 1998, consisting of an additional 13 core holes totalling 2,000 metres. Positive results were obtained in four of the holes prompting a third phase of drilling in August and September 1998 consisting of 4 holes totalling 800 metres. These holes failed to return significant mineralization and BHP Exploration suspended the project pending economic review. In 1999, following a review of past results, additional drilling and continued exploration on the property was planned but never carried out.

In 2000, after entering into the Earn-in Agreement with BHP Exploration, Ivanhoe carried out a reverse circulation (“RC”) drill program to delineate a chalcocite blanket intersected in one of BHP Exploration’s diamond drill holes. This program consisted of 109 RC holes totalling 8,828 metres. The holes were targeted to define supergene mineralization that might be amenable to a heap leaching SX-EW process similar to the one used at Ivanhoe’s Monywa copper mine in Myanmar. Ivanhoe reviewed the results and decided that the chalcocite blanket at Central Oyu was neither large enough nor high grade enough to be economic as a stand-alone deposit.

In 2001, Ivanhoe began its current drilling program.

### ***Geology and Mineralization***

The Oyu Tolgoi Project lies near the boundary of the South Mongolian and the South Gobi tectonic units, in the Kazakh Mongol Belt. The area contains a mixture of arc and back arc rocks that accreted to southern Mongolia during the Paleozoic age.

Within the Oyu Tolgoi Project area, the geology is dominated by a Siluro-Carboniferous sequence of basalts, basaltic andesites and sedimentary sequences. Overlying these sequences are Cretaceous-age, flat-lying sediments consisting of pebbly gravel, sandy silt, sand and clay, with an average thickness of between 15 to 20 metres. The volcanic rocks are intruded by a complex variety of feldspar porphyry, feldspar-hornblende porphyry and quartz-feldspar porphyry stocks and dykes.

Ivanhoe has gathered the most comprehensive understanding of the property geology from its detailed mapping and extensive drilling of the Southwest Oyu zone. Ivanhoe believes that the mineralized areas

consist of mafic volcanic rocks intruded by quartz monzodiorite intrusions. Copper and gold mineralization appears to lie in both the basaltic volcanic country rocks and the intrusions. There are also barren quartz monzonite porphyries, hornblende, biotite andesite and rhyolite dykes that regularly cut the quartz monzodiorite intrusions.

The Oyu Tolgoi Project contains both hypogene and supergene copper mineralization. The hypogene deposits appear to belong to a porphyry copper-gold system of the potassic-calcalkaline type. Ivanhoe has discovered evidence of hypogene deposits in all four zones.

At South Oyu and Southwest Oyu, copper and gold mineralization is found primarily in intensely veined (stockwork and sheeted) magnetite-rich, pyrite-poor assemblages dominated by quartz and chalcopyrite, with minor amounts of bornite and traces of molybdenum in basaltic volcanics and quartz monzodiorite intrusives. Ivanhoe suspects that South Oyu and Southwest Oyu belong to the same zone offset by a northeast trending fault. The correlation between gold and copper grades suggest that the gold distribution is in the form of attachments to or inclusions in copper sulphides. Molybdenum grades are erratic and Ivanhoe has not determined the nature of its distribution. Ivanhoe's preliminary metallurgical work indicates that at least some of the molybdenum is enriched in rhenium. High values of rhenium in molybdenum is a feature of some gold-rich porphyry copper deposits.

In North Oyu, copper mineralization occurs in breccias at depths greater than 100 metres below the surface. There appears to be some supergene chalcocite and covellite, but the higher grade intercepts are associated with veins containing pyrite, chalcopyrite and traces of covellite and chalcocite, which appear to be hypogene. Gold values are usually low but sometimes higher in copper-rich zones. Molybdenum values are usually low.

The principal supergene deposit at Oyu Tolgoi is located at Central Oyu. It consists of a chalcocite blanket beneath a leached cap. Rock chip samples across the leached cap contain anomalous concentrations of copper and gold. Meanwhile, supergene mineralization occurs 40 to 80 metres below the surface. The upper 20 to 40 metres of the enrichment blanket is made up of chalcocite with minor covellite and digenite as coatings on pyrite. The lower parts of the blanket which have lower copper grades are dominated by covellite. The upper chalcocite and lower covellite zones are a standard feature of enrichment blankets. Distribution of gold is not well known. Most of the system contains less than 30 parts per billion of gold but there are erratic values of 0.1 parts per million ("ppm") of gold to 1 ppm of gold. The best gold values are in the west side of Central Oyu, in both the chalcocite blanket and the underlying basaltic volcanics. There is also hypogene mineralization beneath the enrichment blanket.

### ***2001/2002 Drilling Program***

The Ivanhoe Group commenced its drilling program in 2001 by drilling RC holes at South Oyu, to test its supergene and hypogene potential. Ivanhoe then expanded the exploration project to encompass all four zones, and by February 27, 2002 had completed 23 RC holes, 3 combined RC and diamond drill ("RCD") holes and 30 diamond drill holes.

In July, 2001 the Group encountered a long intersection of high grade hypogene copper and gold mineralization at OTRCD-150 (508 metres averaging 0.81% copper and 1.17 grams per tonne ("g/t") gold) at Southwest Oyu. Following this discovery, the Ivanhoe Group undertook a surface program of magnetic and IP surveys over an area of roughly 4 kilometres by 3 kilometres. Two magnetic surveys were performed, each covering an area of 2 kilometres by 3 kilometres. The southern part of the area was

surveyed on north-south lines, 25 metres apart with stations 5 metres apart. The northern area was surveyed on east-west lines, 50 metres apart with stations at 5 metre intervals. The surveys identified target areas at Southwest Oyu, South Oyu, Central Oyu, North Oyu, the Airstrip and anomalies in the far northern end of the Oyu Tolgoi Project.

The Group has used the preliminary maps from the IP survey as the basis for its ongoing drilling program. The results indicate that the most promising exploration target in the area is a zone of high-grade mineralization around hole OTRCD-150 at the Southwest Oyu zone. Accordingly, the Ivanhoe Group changed its focus from testing for supergene mineralization at Central Oyu to drilling activity on Southwest Oyu in order to further define the hypogene zone of mineralization.

By the end of January, 2002, the Group had completed 24 holes at Southwest Oyu. The drilling indicates that there is a wide zone of mineralization encompassing a narrow high grade zone. Exploration to date indicates that a zone of mineralization grading at least 0.3% copper equivalent (a combination of copper and gold expressed as a copper equivalent and based on 100% recovery for both metals, as metallurgical studies are still too preliminary to predict recoveries in a commercial process) is contained within a shell which extends approximately 1,200 metres in a northeast-southwest direction and 350 metres in a northwest-southeast direction. The zone extends to at least a vertical depth of approximately 750 metres, commencing at a depth of approximately 50 metres. OTRCD-180, 183 and 185 returned encouraging mineralization at lower depths. OTRCD-180 graded 2.37 g/t gold and 1.05% copper for 208 metres beginning at a down-hole depth of 618 metres. OTRCD-185 intersected 1.31 g/t gold and 0.45% copper for 400 metres beginning at a down-hole depth of 498 metres.

The Ivanhoe Group drilled diamond drill holes OTD-184, 185 and 190 as cross-holes (125 degree azimuth) across the general northeasterly trend of drill holes OTRCD-150 and OTD-160 through 173, which established the horizontal dimensions of the steeply to vertically plunging mineralized body. The drill results from the 035 degree azimuth holes OTRCD-150 and 169 indicate the longitudinal width of the high grade core zone (grading in excess of 0.7% copper and 0.7 g/t gold) is up to 315 metres in length at a depth of 250 metres below surface. Hole OTD-177's (125 degree azimuth) drill results suggest that the thickness of this zone is approximately 230 metres at the same depth. OTD-185, drilled steeply below OTD-177, indicates a thickness of 250 metres approximately 500 metres below surface narrowing to 180 metres thickness in OTD-190, 80 metres to the southwest. Surrounding the high grade core is lower grade mineralization, generally in the 0.3% to 0.5% copper and 0.3 to 0.5 g/t gold range extending 100 metres to 200 metres laterally and northwest, 700 metres southeast to the collar of OTD-167 and approximately 600 metres northeast to OTD-12. On the southeast margin of Southwest Oyu, the high grade core is cut off by a post mineral fault and on the northeast margin it is cut off by late mineral dykes.

The results of significant intercepts from the recent drilling at Southwest Oyu's discovery zone are summarized below.

**Southwest Oyu “Discovery Zone”  
Summary of Significant Intercepts**

<b>Hole No.</b>	<b>Final Depth Metres (“m”)</b>	<b>Core Length (m)</b>	<b>Gold (“Au”) g/t</b>	<b>Copper (“Cu”) %</b>
150	590	508	1.17	0.81
160	460.7	288	1.68	0.80
161	472	358	1.70	0.71
162	360.5	190	1.76	0.75
166	601.9	478	1.38	0.74
171	614.3	100	1.29	0.67
172	772	116	2.35	0.88
173	692	24	1.32	0.82
174	554	74	0.45	0.58
175	461	138	0.35	0.45
176	674	146	1.49	0.76
177	591	192	1.10	0.56
178	449	128	1.01	0.59
179	490.4	14	0.32	0.57
180	895	120	3.44	1.37
183	853	454	1.71	0.92
184	705	216	1.87	0.97
185	1015	400	1.31	0.56
189	322	200	1.9	0.77
190	913	178	1.55	0.46

The southern extension of Southwest Oyu was also drilled to test the continuation of mineralization to the southwest as inferred by IP survey results and to follow up on previous drilling by BHP Exploration which intersected 142 metres of 0.93 g/t gold and 0.53% copper. The results of this drilling are summarized below.

**Southwestern Oyu – Southern Extension**

<b>Hole No.</b>	<b>Core Length (m)</b>	<b>Au g/t</b>	<b>Cu %</b>
165	466	0.31	0.41
167	318	0.52	0.49
168	382	0.30	0.21

The Group has also conducted recent drilling on the South Oyu zone. The drilling is designed to test adjacent magnetic and IP chargeability anomalies that underlie outcroppings of copper oxide mineralization. Previous drilling by the Group identified areas of significant copper and gold mineralization in a series of shallow holes. OTRCD-149 drilled to a depth of 405 metres averaged 1.08% copper and 0.31 g/t gold in a 63 metre thick supergene blanket, underlain by 52 metres at 1.73% copper and 0.23 g/t gold, followed by 82 metres at 0.57% copper and 0.27 g/t gold and then 76 metres at 0.49% copper and 0.38 g/t gold. OTD-164 was drilled under OTRCD-149 to a down-hole depth of 516.9 metres to test the depth of mineralization. OTD-164 returned similar results to the lower-grade intervals of OTRCD-149, indicating that mineralization continues to a depth of at least 500 metres. Hole OTD-170 drilled between

Southwest Oyu and South Oyu returned weaker levels of gold and copper. Ivanhoe believes a major northeast trending fault cuts off mineralization on the southeast side of Southwest Oyu, and that South Oyu may be an offset of this mineralization. The Group drilled OTD-186 to the west of OTRCD-149 in order to test an anomaly identified from the magnetic survey, but did not intersect significant mineralization.

Central Oyu is a separate system with different mineralogy and geochemistry. At Central Oyu, BHP Exploration's hole OTD-3 intersected a 30 metre thick, supergene-enriched, chalcocite blanket. The Group's RC drill program in 2000 outlined an area of 1,100 metres by 600 metres that is underlain by the chalcocite blanket and copper oxide mineralization averaging 20 metres to 35 metres in thickness at depths varying from 20 metres below the surface to 100 metres below the surface.

Primary covellite and chalcopyrite occurs below the chalcocite blanket at Central Oyu, indicating the potential for hypogene mineralization. Ivanhoe drilled hole OTD-159 in this area to test for hypogene potential. OTD-159 intersected 301 metres (from 47 to 348 metres) of chalcocite-covellite mineralization averaging 0.71% copper, within a broader intercept of 375 metres, from 47 to 422 metres, grading 0.69% copper. This includes 30 metres of dominantly chalcocite mineralization from 47 to 77 metres, grading 1.50% copper and 0.22 g/t gold. The hole was a twin, and a deeper re-drill, of a 130-metre-deep, RC hole, OTRC-94, and extends significant copper grades to a depth of at least 422 metres below surface. The PQ-sized drill core in the top 130 metres also indicates a general increase in copper grades compared to the earlier RC chip samples.

Ivanhoe received further evidence of hypogene mineralization at Central Oyu from its IP survey, which identified an IP chargeability anomaly covering the northwest flank of Central and Northern Oyu. The anomaly has a strike length of 1,600 metres with a width of 400 metres. The Ivanhoe Group recently completed hole OTD-187 to test the hypogene potential of the IP chargeability anomaly in Central Oyu. OTD-187 was drilled to a depth of 532.6 metres grading 1.40 g/t gold and 0.84% copper for 102 metres between 334 and 436 metres. Ivanhoe drilled OTD-188 385 metres northwest of OTD-187 to test the extent of the zone of copper mineralization, but intersected only weak mineralization. The Group is currently drilling additional diamond drill holes at Central Oyu to further define the zone of hypogene mineralization.

In North Oyu, BHP Exploration's hole OTO-02 intersected narrow zones of chalcopyrite-rich stockwork mineralization grading up to 1% copper in volcanic rocks sandwiched between post-mineral, syenite dykes.

The Ivanhoe Group plans to drill more than 50,000 metres to test the hypogene potential of the Southwest, Central, North and South Oyu zones and explore for additional high-grade zones based on the IP and magnetic surveys. Starting in early 2002, the Group broadened its focus from drilling the Southwest Oyu zone in order to gather sufficient data to estimate the mineral resource on the discovery zone to include drilling in other areas with potential significant mineralization as indicated by the IP and magnetic surveys. The Ivanhoe Group has completed an additional twenty-five diamond drill holes in Southwest Oyu, Central Oyu and South Oyu for which assay results are currently pending.

### ***Mineral Resources and Reserves***

The process of determining the extent of mineralization at the Oyu Tolgoi Project is still at a preliminary stage. To date, an inferred resource has been estimated at two of the zones of mineralization. These estimates have been verified and adopted by RPA in the Roscoe Postle Report. Insofar as the inferred

mineral resource estimates identified to date are not mineral reserves, they do not have demonstrated economic viability.

The mineral resources of the Oyu Tolgoi Property are estimated as follows:

<b>Mineral Resources March 9, 2002</b>			
<u><b>Deposit</b></u>	<u><b>Inferred</b></u>		
	<b>Tonnes</b>	<b>Average Cu Grade<sup>(1)</sup></b>	<b>Average Au Grade<sup>(1)</sup></b>
Central Oyu	39,200,000	0.73%	N/A
Southwest Oyu	703,000,000	0.37%	0.47g/t

<sup>(1)</sup> The cut-off grade for Central Oyu and Southwest Oyu is 0.2% Cu and 0.2% CuEQ respectively. The formula used for the calculation of CuEQ is set forth below under the heading Southwest Oyu Resource Estimate.

#### *Central Oyu Resource Estimate*

The Central Oyu estimate was based on an internal copper resource estimate of Ivanhoe from its 2000 drill program of Central Oyu's supergene deposit. RPA verified and adopted the resource estimate in the Roscoe Postle Report.

D. George Cargill, Ph.D., P.Eng., reviewed and verified the estimate for RPA. The database used for the estimate was in keeping with industry standards. For the estimate, a cut-off grade of 0.2% Cu was used. In RPA's view, this is an appropriate cut-off grade for this type of resource estimate.

Original assays for total copper were done by Analabs Pty. Ltd. ("Analabs") in Ulaanbaatar. No acid soluble or cyanide soluble copper assays were done but may be warranted in the future. Total copper check assays were done at Indo Assay lab in Indonesia, and results were reported to be acceptable. Checks on assay values over 1% Cu were within 5% to 10% of the original assays and for assay values less than 1% were within 10% to 20%. RPA had check assays carried out at XRAL laboratory in Canada on nine samples from the Central Oyu zone. The check assays gave reasonable correlation with the original assays.

Vertical RC holes were used for the estimate. Although a few diamond drill holes were within the resource area, they were not used. The RC holes were spaced 100 m to 200 m apart along east-west section lines 100 m to 200 m apart. The Central Oyu zone consists of an essentially continuous blanket of supergene copper mineralization which covers an area approximately 1,100 m north-south by 600 m east-west. In places the supergene zone consists of two layers (main and upper zones) separated by waste material. The deeper main zone predominates and extends to a depth of 40 metres to 80 metres in most places. It has been drilled to a maximum depth of about 120 metres.

Ivanhoe used a polygonal estimation method, whereby drill hole intercepts on plan were assigned an area of influence midway to adjacent drill holes up to a maximum of 100 metres. Polygon areas were measured by planimeter and multiplied by drill hole intersection length and by a density factor of 2.3 tonnes

per cubic metre to derive tonnage. This density factor is appropriate. Tonnages were summed and the grades for each intersection were weighted by tonnage to determine the average grade of the mineral resource.

The Oyu Tolgoi Project is still at the exploration stage and it is too early to assess the possible effect on the resource estimate of factors such as environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other potential issues. At this time, however, RPA has no reason to believe that any of these potential issues will be an impediment to development of the project. Infrastructure is sparse in the area of the Oyu Tolgoi Project and any mining operation would need suitable infrastructure to be developed.

Metallurgical testwork was carried out on three samples from Central Oyu. The copper minerals reported to be in the samples are enargite, covellite and digenite. Flotation tests produced good copper recoveries (82%) for sample S4 (“chalcocite zone”) and sample S6 (“covellite zone”). Column leach and bottle roll tests on sample S4 gave 62% to 82% copper recovery and on sample S5 gave 5% to 7% copper recovery.

In RPA’s opinion, the Central Oyu supergene zone estimate should be classified as an inferred mineral resource. It should be considered a preliminary estimate at this time. It has been done by a manual method and may be done in future as a computerized block model.

Although Ivanhoe considers the Central Oyu zone to be uneconomic for a stand-alone mining operation, RPA considers that it has reasonable prospects for economic extraction in combination with or as a satellite deposit to other mineral deposits. The geometry of the Central Oyu supergene zone lends itself readily to open pit mining with a low strip ratio.

#### *Southwest Oyu Resource Estimate*

The Southwest Oyu resource estimate was originally prepared by AMEC E & C Services Limited (“AMEC”) in March, 2002, who completed a preliminary copper and gold resource estimate for the northern portion of the Southwest Oyu hypogene zone. RPA reviewed and verified the resource estimate in its March 9, 2002 amendment to the Roscoe Postle Report.

The Southwest Oyu mineral resource was estimated with a 3-dimensional block model utilizing MineSight® a commercial mine planning software. To carry out its review of the Southwest Oyu mineral resource estimate, RPA converted the 3-dimensional database to Gemcom®, another commercially available mine planning software.

For the resource estimate, the Southwest Oyu database contained assay data for 32 diamond drill holes totalling 16,991 metres. The drill core was logged at the site and geological information was transferred to digital files containing drill hole survey locations, down hole survey data, geological, geophysical and assay data. RPA carried out checks and validations for both copper and gold assays. RPA believes that the analytical reproducibility of the data is better for copper than gold. The quality of the assay database is adequate for the estimation of an inferred mineral resource but, until better reproducibility can be demonstrated for gold assays, the resource must remain at an inferred level of classification. The digital drill hole database is adequate for resource estimation and the information collected is in keeping with standard industry practices for this type of exploration target.

The Southwest Oyu block model was organized on an orthogonal grid with a 20 metre by 20 metre block size and a 15 metre bench height. Copper and gold grades were composited to 15 metres before grade interpolation. Each block in the model is comprised of six separate models: rock code, density, copper grade, gold grade, copper equivalent grade and percent ore. Rock codes were assigned to the block model by first constructing 3-dimensional solids of the high grade portion of the deposit, the three major post-mineral dikes, the Southwest fault zone and the top of the hypogene mineralization. Because the bulk of the mineralization is within basaltic andesite, a bulk density of 2.80 was selected for the resource estimation. RPA recommends that the bulk density determination program be continued and expanded to include both mineralized and unmineralized samples. Copper and gold values were interpolated into the model by ordinary kriging.

Interpolation was restricted within zone boundaries. As such, samples from zone 1 were not used to interpolate grades into blocks of zone 2 and vice-versa. A maximum of 15 composites were used to estimate a block grade. The minimum number of composites required to estimate a block was set at 4 for zone 2 and 3 for zone 1. A maximum of 3 composites (zone 2) and 2 composites (zone 1) were allowed per drill hole.

RPA re-estimated the mineral resource using the same interpolation parameters as defined by AMEC. RPA also estimated the mineral resource using inverse distance weighting to the second power to interpolate the grades. RPA also re-composited the assay data to 5 metre lengths within the geological domains and re-estimated the mineral resource using ordinary kriging and inverse distance to the second power.

Based on the data reviewed, RPA concluded that the mineral resource at the Southwest Oyu zone was estimated in a manner consistent with standard industry practice for this type of deposit. The mineral resource for the Southwest Oyu zone is classified as an inferred mineral resource in accordance with CIM Standards. The mineral resource was reported at copper equivalent (“CuEQ”) (\$0.80) cut-off grades. The copper equivalent was calculated, after copper and gold grades were estimated into the block model, using the following formula:

$$\text{CuEQ } (\$0.80) = \% \text{ Cu} + (\text{Au g/t} * 9.65)/17.64$$

The equivalent grade was calculated to reflect a price of US\$0.80 per pound of copper and US\$300 per ounce of gold and 100% metal recovery. RPA believes that it is premature at this stage to use an equivalent copper grade as cut-off because inadequate metallurgical testing has been performed. RPA also believes that some of the mineral resource at the Southwest Oyu zone could be re-classified as indicated under CIM Standards if better reproducibility could be achieved with the gold assays.

RPA recommends that all assays that returned copper grades in excess of 0.5% copper should be re-assayed for gold and the mineral resource be re-estimated using the new assay data.

RPA validated the resource model by inspection of plans and sections. The plots included drill hole composite values to allow direct comparison of composite grades to kriged block values. The checks showed good agreement between drill hole composite values and kriged model cell values.

The Oyu Tolgoi project is still at the exploration stage and it is too early to assess the possible effect on the resource estimate of factors such as environmental, permitting, legal, title, taxation, socio-economic,

marketing, political or other potential issues. At this time, however, RPA has no reason to believe that any of these potential issues will be an impediment to development of the project.

### *Sampling and Analysis*

The Group's sampling procedure consists of drilling diamond drill holes on 80 metre to 120 metre centres at -55 degrees on parallel sections spaced from 80 metres to 100 metres apart. The diameter of the drill core obtained from the Ivanhoe Group's diamond drill holes varies between 42.0 millimetres (BTW size) and 85.0 millimetres (PQ size), with the majority being 47.5 millimetres (NQ size) and 63.5 millimetres (HQ size). Ivanhoe has generally been able to recover greater than 95% of the core, which is carefully pieced together and cut along the core axis with a diamond saw.

The Group places one half of all BTW, NQ and HQ core samples in boxes for future reference and the other half is placed into numbered bags for shipment to the laboratory for sample preparation and assay. PQ core is quartered with one quarter of the core shipped for assay. Typically the core is composited in two metre lengths to make an assay sample, although RC holes are typically one metre long. The drill holes are generally oriented on an azimuth of 35 degrees because it is roughly perpendicular to the observed quartz veins in weathered bedrock at the surface. Given the intensity of the stockwork vein system (up to 30% over broad mineralized intervals), Ivanhoe does not anticipate that there will be a significant bias on the vein set by the drill holes. To verify this assumption, Ivanhoe has drilled seven holes perpendicular to 35 degrees.

The Ivanhoe Group uses a standard two-metre sampling interval on its drill holes, regardless of the rock type and internal vein structure. This minimizes the possibility of improper data entry into the sampling database and will be compatible with the expected future uses of the sampling database, as pre-feasibility and feasibility studies will likely rely on between six to twelve metre intervals. In addition, mining operations will likely employ large capacity bulk mining equipment that negates detailed analytical mining data. Barren dykes are assayed with the mineralized zones and included in average grade intervals unless they are wider than ten metres, which would make them amenable to selective waste mining.

Samples of previously assayed core are inserted into the sample stream at the project site on a 1 in 40 basis to provide a check on the sample preparation and analytical results. Similarly, barren, unmineralized core samples are added into the sample stream on an alternate 1 in 40 basis to provide an assay blank in the analytical process. This helps monitor the sample integrity during transport to the lab in Ulaanbaatar and for contamination in the system.

Analabs, of Ulaanbaatar, Mongolia, has performed the assays of the Group's drill holes. Chemex Labs and Bondar Clegg, both of Vancouver, British Columbia, previously performed check assays on 79 of those samples selected on a 1-in-10 basis from hole OTRCD-149 and holes OTD-150. The results of these check analyses indicate that Analabs' gold fire-assays and copper assays are statistically similar to both Chemex Labs and Bondar Clegg. However, Analabs reported gold samples systematically higher than Chemex Labs and Bondar Clegg. A subsequent check assay on 81 samples by Bondar Clegg resulted in a satisfactory correlation of both copper and gold compared to Analabs' results. Analabs' molybdenum assays are consistently running higher than those of both Chemex Labs and Bondar Clegg. Ivanhoe retained Barry W. Smee, Ph.D., P.Geo., an independent geochemist, in order to determine the appropriate corrective measures. The Group had independent check assays performed on a 1-in-20 basis on all assayed holes until February, 2002, when standards prepared from coarse rejects selected from drill

holes OTD-150 and 159 and certified by Dr. Smee were inserted into the sample stream at the project site on a 1 in 20 basis.

In February and March, 2002, three batches of sample pulp totalling approximately 600 samples were submitted to Assayers Canada in Vancouver for a check assay. The results of these assays were compiled with assays from samples previously submitted to Chemex Labs and Bondar Clegg and analyzed by Dr. Smee. He determined that the Analabs' gold assays are 4.3% higher than those of Assayers Canada, while the copper assays are 3% lower. Assay standards were only inserted in the last two sample batches submitted to Assayers Canada, so the Group has not yet determined which laboratory has the most accurate assay results.

The Group also retained Dr. Smee to audit the Analabs assay facility in Ulaanbaatar and the Oyu Tolgoi Project site in March, 2002. The Ivanhoe Group has implemented quality control and sampling recommendations arising from that audit, including the use of 3 certified standards representative of the primary mineral types and assay grades encountered in the drilling, the use of field blanks derived from a barren intrusive outside of the mineralized area, the use of core duplicates taken from the other half of the split core and the use of splitter duplicates from coarse sample rejects and pulp duplicates taken by the assay lab in Ulaanbaatar. The Ivanhoe Group has also implemented Dr. Smee's recommendation that the Group re-assay sample batches whose standards and field blanks fail the quality control protocol. Accordingly, only assays that pass quality control standards will be entered into the final database and reported to the public. To verify the integrity of the previous gold assays in accordance with the recommendations of the Roscoe Postle Report, the Ivanhoe Group intends to re-sample between 10% and 20% of the samples from all mineralized intervals within the Southwest Oyu resource block and re-assay for gold and copper.

In 2001, The Group shipped six 50 kilogram core samples from OTRCD-149 (South Oyu zone), OTD-150 (Southwest Oyu zone) and OTD-159 (Central Oyu zone) to Lakefield Research in Canada for preliminary metallurgical testing of typical intercepts of high-grade and intermediate grade supergene and hypogene mineralization. Lakefield conducted preliminary froth flotation tests and column leach tests on the samples. All samples with the exception of the sample of chalcocite mineralization, responded well to copper mineral concentration by flotation. Commercial grade copper mineral concentrates, containing 26 – 30% copper, were achieved at metal recoveries between 81 - 91% of the copper in the feed sample. Gold recoveries were approximately 76 – 77% of the metal in the feed.

The sample from the chalcocite blanket at Central Oyu did not respond well to the recovery of copper by flotation but did respond well to bacterial leaching in a column. The column leach is designed to test the amenability of the sample to a low cost bacterial heap leaching method of copper extraction. Projected copper extraction from the chalcocite sample is in the 65-82% range after approximately 3 months. The tests are still in progress.

Seven samples of core were shipped to Minnovex Technologies in Toronto, Ontario for comminution testing. In general, the results of the tests indicated that the rock could be classified as "hard". However, the program was performed on a limited number of samples and significantly more testing is required before final conclusions can be drawn.

RPA collected seven samples of drill core from OTRCD-149 and 150 and OTD-159. RPA engaged XRAL Laboratories of Toronto to perform specific gravity testing on the samples. RPA reported that

XRAL Laboratories' testing returned a satisfactory degree of correlation between its results and those of Analabs' original assays.

## **Monywa Copper Project, Myanmar**

### ***Project Description and Location***

The Ivanhoe Group operates the Monywa Copper Project in west central Myanmar, approximately 5 kilometres west of the town of Monywa at 22°05' north and 95°00' west. The site is approximately 110 kilometres west of Mandalay and 832 kilometres by road north of the capital city of Yangon, and is situated on the west bank of the Chindwin River, near its confluence with Yama Stream.

The Monywa Copper Project comprises four mineralized deposits: Sabetaung, Sabetaung South, Kyisintaung and Letpadaung. The two Sabetaung deposits and Kyisintaung are adjacent to each other and have been developed as the S&K Mine, the first phase of the Monywa Copper Project. The fourth deposit, Letpadaung, is approximately seven kilometres southeast of the S&K Mine site and is to be the subject of the second future development phase of the Monywa Copper Project. The S&K Mine site property covers approximately 3,059 hectares and the Letpadaung deposit covers approximately 3,269 hectares.

The Monywa Copper Project is a joint venture between Ivanhoe and Mining Enterprise No. 1 ("ME1"), an entity wholly-owned by the Government of Myanmar. Ivanhoe holds a 50% interest in the joint venture, which operates through Myanmar Ivanhoe Copper Company Limited ("JVCo"), a company incorporated under the laws of Myanmar. JVCo operates the S&K Mine, an open-pit mine using heap leach SX-EW technology designed to produce 25,000 tonnes per annum of London Metal Exchange ("LME") Grade A cathode copper. JVCo also plans to develop a copper mine on the Letpadaung deposit.

JVCo pays royalties to the Myanmar Ministry of Mines in respect of cathode copper sold by the Monywa Joint Venture at a rate of 2% of the value of cathode copper sold during the first five years of commercial production. Thereafter, the royalty rate increases to 4% plus an amount equal to 2% of the value of cathode copper sold during the first five years of commercial production, amortized and payable in equal instalments over the following five years. JVCo must pay all such royalties in cash or in kind at the option of the Myanmar Ministry of Mines. JVCo must also pay rent to the Myanmar Ministry of Mines at an annual rate of \$500 per square kilometre.

The Monywa joint venture is governed by a joint venture agreement which provides that the joint venture will operate on each deposit for twenty years from the date of commencement of commercial production on such deposit. The joint venture may apply for an extension for an additional five-year period if the board of directors of JVCo determines that further production is technically feasible and economically viable, subject to receipt from applicable Myanmar governmental authorities of all necessary approvals to continue operations.

### ***Accessibility, Climate, Local Resources, Infrastructure and Physiography***

The Monywa Copper Project is located approximately 110 kilometres west of Mandalay, Myanmar's second largest city. Several villages are located in and near the mine site. The mine townsite, Nyaungbingyi on the west bank of the Chindwin River and Monywa on the east bank are the nearest population centres. Monywa, which is the main supply centre in the area, has a population of approximately 500,000.

The mine site is situated on the west bank of the Chindwin River to the east of the Chin Hills, within Myanmar's flat central plains. Elevations range from 75 metres above sea level on the banks of the Chindwin River, to about 330 metres above sea level at the crest of the Letpadaung Hills. The area is characterized by dry zone vegetation consisting mostly of low growing shrubs and grasses together with cultivated fields. The area has a dry, continental monsoon type climate. Winters are warm and very dry, while summers can be extremely hot with thunderstorm activity and localized flooding.

Yangon is the major entry point for Myanmar with regular air service from Yangon to Mandalay. The mine site is accessible by paved road from Mandalay. The drive takes about three hours and culminates in a ferry crossing of the Chindwin River. The mine site can also be reached from the town of Pakokku on the Irrawaddy River by way of an unimproved road on the western bank of the Chindwin River. The town of Monywa is also linked by rail to Mandalay and Yangon. The Irrawaddy and Chindwin Rivers also provide a viable shipment route for copper, bulk supplies and heavy equipment to and from Yangon and the mine site.

### *History*

The existence of copper mineralization in the Monywa area has been known for centuries. Ancient copper extraction from shallow oxidised ores is evidenced by slag remnants in some of the villages surrounding Sabetaung.

In the early 1900s, a British company registered gold and copper claims in the Letpadaung area. Several existing small adits were probably excavated around that time. During the 1930s, attempts were made to extract copper from malachite and other minerals which occur locally within the Letpadaung deposit. Extensive workings were opened, but soon abandoned, as the attempts were unsuccessful.

In the mid-1950s, the Burma Geological Department and a survey team from Yugoslavia visited the area as part of a regional reconnaissance and recommended further study. Between 1957 and 1960, the Burma Geological Department, using a foreign contractor, undertook an economic survey of the Monywa copper region. This work was followed up with additional drilling by the Burma Geological Department.

From 1972 until 1976, the Japanese Overseas Technical Co-operation Agency financed a programme of exploration and pilot plant studies leading to a feasibility study for the Sabetaung and Kyisintaung deposits. The programme included underground exploration at Sabetaung. A number of holes were drilled in the Sabetaung and Kyisintaung deposits. The Japanese built and operated a 50 tonne per day pilot plant and planned a mill and smelter project that was never implemented.

In June 1978, an agreement for development of the Sabetaung and Kyisintaung deposits was signed between ME-1 and Bor Copper Institute of Yugoslavia ("Bor"). The programme was funded, in part, by the government of Yugoslavia. Bor prepared a full feasibility study and mine plan which served as the basis for construction of a concentrator complex to process 8,000 tonnes per day of ore from Sabetaung, Sabetaung South and Kyisintaung and to produce copper concentrates for export. During the mid-1980s the parties mined feed ore from the Sabetaung pit only, although they also carried out limited stripping at Kyisintaung.

Ivanhoe and ME-1 entered into an agreement in March 1994 to carry out feasibility studies on the Sabetaung and Kyisintaung deposits, to construct a pilot plant to test the use of an SX/EW process on Sabetaung ores and, subject to feasibility, to enter into a joint venture to develop the Monywa Copper Project. The parties also agreed to carry out additional feasibility studies on the Letpadaung deposit.

In April 1996, Ivanhoe and ME-1 entered into a joint venture agreement to develop the S&K Mine. In September 1997, Ivanhoe and ME1 entered into project financing, construction and marketing agreements with Marubeni U.K. P.L.C. and Nissho Iwai Europe P.L.C., a syndicate of Japanese trading houses, for a \$90 million project loan facility to finance construction of the S&K Mine. During 1998 and 1999, the project loan facility was used, in part, to pay a \$75 million lump sum engineering, procurement and construction contract that was awarded to a consortium of Marubeni Corporation ('Marubeni') and Chiyoda Corporation, a Japanese engineering and construction concern. JVCo also entered into a long-term sales agreement with Marubeni in which Marubeni agreed to purchase copper cathode produced by the S&K mine during the first seven years of operation. JVCo completed construction of the S&K Mine mining and processing facilities in 1998 and the project achieved full commercial production at a rate of 25,000 tonnes of copper cathode per annum by the end of 1998.

### ***Geological Setting and Mineralization***

#### *Regional Geology*

The Monywa copper district is located along the generally north-trending Inner Volcanic Arc which bisects the Inner Burman Tertiary Basin tectonic province. That province coincides with the Central Lowlands physiographic province. Elevations in the district range from about 70 to 330 meters. There are four known copper deposits within the district: Sabetaung, Sabetaung South, Kyisintaung, and Letpadaung, all of which occur in andesitic intrusive plugs of late Tertiary age and associated older Tertiary pyroclastics and sediments. The plugs form hills above a generally flat plain.

Pyrite and primary and secondary copper sulfide minerals, mainly chalcocite, occur in hydrothermal breccias, as fracture fillings, and as disseminations in a supergene enriched zone, in a mixed secondary and primary zone, and in a primary zone below an oxidized leached cap that contains essentially no copper values. The hydrothermal breccias are controlled primarily by fractures, and the primary copper mineralization occurs predominantly in and associated with the breccias and in fractures.

#### *Local and Property Geology*

The Sabetaung deposit is currently being mined by open pit methods. The dimensions of the mineralized zone are approximately 500 metres by 500 metres and the deposit has been tested by drilling to depths of 300 metres. Copper mineralization in the zone occurs as subparallel narrow chalcocite-pyrite veinlets, fracture fillings and irregular hydrothermal breccia bodies hosted in intermediate volcanic rocks, dacite porphyries and possibly tuffs. Chalcocite appears to be replacing pyrite to varying degrees and some veinlets up to 10 centimetres wide contained better than 50% chalcocite.

The Sabetaung South deposit is located some 500 metres southeast of the Sabetaung pit. The host rock is comprised of hydrothermal breccias which typically display rounded and mixed clasts of either sediment fragments or tuffs in a matrix comprised of rock, flour-silica and iron oxides after sulphides. The surface dimensions of the brecciated zone are approximately 200 metres by 250 metres. Drillhole data indicates that leaching extends to a depth of 40 metres, and that a chalcocite-bearing zone is developed over a depth of more than 100 metres below the leached zone.

The Kyisintaung deposit is an area of widespread intense acid sulphate leaching developed over dacite porphyry-hosted fracture and breccia-related chalcocite mineralization. Silicification predominates, with minor kaolinite being developed in the argillized periphery of the deposit. Drilling indicates that the thickness of the intensely leached cap is up to 200 metres and that it is underlain by a major zone of

chalcocite enrichment. Chalcocite occurs predominately as thin coatings on pyrite which occurs as disseminations and fracture fillings in the host rock. Mineralized hydrothermal breccias often contain greater than 2% total copper and appear to be the primary mineralization within the deposit.

The Letpadaung deposit encompasses approximately five square kilometres and crops out as a cluster of fault bounded hills above a generally flat plain. The Letpadaung deposit is bounded on the north by the Chindwin Basin Fault and approximately 1,000 metres to the south by the subparallel Monastery Fault Zone. The block bounded by the Chindwin and the Monastery faults hosts the majority of the Letpadaung ore body. Within this fault bounded block is a complex system of northeast and northwest faults. Episodic hydrothermal brecciation is the most striking geologic feature related to mineralization at the Letpadaung deposit. Hydrothermal breccia occurs within northwest and northeast trending, lozenge shaped breccia dikes which pinch and swell in all directions. Individual breccia dikes range from a few centimetres to over five metres in thickness. The breccias are the main control of high-grade copper mineralization and are preferentially developed in the more brittle, silicified alteration zones. These northeast trending zones and swarms were considered to be the dominant control on mineralization, but the recently recognised northwest trending zones and swarms are now known to exert a strong control on the location and orientation of mineralization along the Monastery and northwest faults.

#### *Mineralization*

Chalcocite is the predominant copper sulfide mineral in the Monywa deposits. The chalcocite is believed to be mostly secondary and occurs as thin coatings on pyrite. Pyrite occurs in fracture fillings (veins), breccias and vugs, and is disseminated in the groundmass of the rock. Primary chalcocite also occurs in crystalline form in vugs, fractures, and breccias and as graphic intergrowths in pyrite. The deposits can be classified as belonging to the acid-sulfate (high-sulfidation) type.

#### *Exploration, Drilling, Sampling and Analysis*

Exploration drilling was carried out by JVCo on the Sabetaung, Sabetaung South and Kyisintaung deposits consisting of 101 exploration holes totalling 18,000 metres. In addition, another 102 holes for condemnation, continuity studies, water and geotechnical studies were drilled.

JVCo has information on 269 historical core holes totalling about 52,000 metres drilled by third parties in the Kyisintaung, Sabetaung, and Sabetaung South deposits from 1958 to 1983. All of these holes have been included in the JVCo computer database. All but six of these holes are vertical. In 1994 and 1995, JVCo drilled 101 exploration-development core holes totalling about 18,000 metres, 18 core holes totalling about 2,000 metres for metallurgical test samples, and 24 reverse circulation holes for a grade continuity study in the Sabetaung pit, totalling 730 metres, for a total of 143 holes and about 21,000 metres. Sixty-three of the exploration-development holes are angle holes and 38 are vertical holes.

JVCo has also established a computer database in respect of the Letpadaung deposit based on information received from a total of 533 drill holes, of which 304 are exploration drill holes totalling 92,575 metres of diamond drill core which were drilled, sampled and assayed under JVCo' supervision between 1994 and 1996. The remaining drill holes were completed for hydrological, metallurgical or condemnation purposes.

JVCo also recovered information and compiled an electronic database for 143 drill holes totalling 31,286 metres which were drilled between 1957 and 1986 under the direction of a number of Burmese and Myanmar governmental agencies. Due to data inaccuracies, including unreliable drill hole location, poor core recovery, unsatisfactory assay reliability and potentially inadequate drilling direction, JVCo

disregarded these drilling results for resource evaluation purposes. However, JVCo used the data from these holes for statistical comparison with its own database.

All drill core from the JVCo drilling was logged systematically by Ivanhoe Group geologists for geotechnical and geological information. The core was photographed and sampled, generally in two-metre intervals.

Sampling was done by sawing the core in half. One half is stored at the Monywa Copper Project site. The other half was sent to the joint venture's analytical laboratory, where it was crushed and pulverised. The coarse rejects and a subsample of the pulverised core are stored at the laboratory. An identical subsample was sent to Inchcape Testing Services of Jakarta, Indonesia, for total copper analysis. JVCo also analysed onsite most copper-mineralised samples for total copper by atomic absorption analysis.

Partial copper analyses, (acid-soluble and cyanide-soluble copper) were performed on part of the database. Cyanide-soluble copper assay results were then used to establish numerical relationships between total copper and cyanide-soluble copper.

Quality control procedures were followed for the JVCo sample preparation and all analytical processes. An electronic database was created at the Monywa mine site office and contains all the geological and related exploration data, including analytical data. All original hard copy documentation is kept at that office.

### ***Mineral Resources and Reserves***

Estimates of reserves and resources at the Sabetaung, South Sabetaung, Kyisintaung and Letpadaung deposits are as of December 31, 2001. Reserves and resources are categorized in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (the "JORC Code"). The principles and procedures of the JORC Code and those of the Standards on Mineral Resources and Reserves Definitions and Guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum (the "CIM Standards") are closely aligned and mineralization categorized as measured, indicated and inferred resources and as proved and probable reserves under the JORC Code would be reported under identical categories pursuant to CIM Standards. Estimated resources include estimated reserves. Resources which are not reserves do not have demonstrated economic viability. Reserve and resource estimates reflect 100% of the deposit. Ivanhoe's share is 50%.

### **Ore Reserves December 31, 2001**

<b><u>Deposit</u></b>	<b><u>Proven</u></b>		<b><u>Probable</u></b>		<b><u>Total</u></b>	
	<b>Tonnes (millions)</b>	<b>Grade<sup>(1)</sup> (%)</b>	<b>Tonnes (millions)</b>	<b>Grade<sup>(1)</sup> (%)</b>	<b>Tonnes (millions)</b>	<b>Grade<sup>(1)</sup> (%)</b>
Sabetaung	-	-	25.4	0.42	25.4	0.42
South Sabetaung	-	-	12.9	0.40	12.9	0.40
Kyisintaung	-	-	185.8	0.40	185.8	0.40
Letpadaung	506	0.45	298	0.40	804	0.43

(1) Cutoff grade for all deposits other than Letpadaung is 0.15%. Cutoff grade for Letpadaung is 0.1%.

**Mineral Resources  
December 31, 2001**

<b>Deposit</b>	<b>Measured</b>		<b>Indicated</b>		<b>Total<sup>(1)</sup></b>		<b>Inferred</b>	
	<b>Tonnes (millions)</b>	<b>Grade<sup>(2)</sup> (%)</b>	<b>Tonnes (millions)</b>	<b>Grade<sup>(2)</sup> (%)</b>	<b>Tonnes (millions)</b>	<b>Grade<sup>(2)</sup> (%)</b>	<b>Tonnes (millions)</b>	<b>Grade<sup>(2)</sup> (%)</b>
S&K Mine <sup>(3)</sup>	-	-	349	0.34	349	0.34	204	0.28
Letpadaung	576	0.43	491	0.35	1,067	0.39	408	0.31

- (1) Represents aggregate measured and indicated resources excluding inferred resources.  
(2) Cutoff grade for all deposits other than Letpadaung is 0.15%. Cutoff grade for Letpadaung is 0.1%.  
(3) Includes Sabetaung, Sabetaung South and Kyisintaung deposits.

The Sabetaung resource model was estimated using the technique of multiple indicator kriging, while the South Sabetaung and Kyisintaung deposits were estimated using the technique of ordinary kriging. The Sabetaung South and Kyisintaung reserves were estimated by running the Whittle Pit Optimization computer program to determine the economic ultimate pit limits. The estimates assume mining costs of \$0.44 per tonne, processing costs of \$1.75 per tonne, general and administrative costs of \$0.87 per tonne, production at the rate of 25,000 tonnes of cathode copper per year, 81% recovery and a copper price of \$0.80 per pound.

The Letpadaung resource model was estimated using the technique of multiple indicator kriging. The reserve was then estimated by running the Whittle Pit Optimization computer program to determine the economic ultimate pit limits. The estimates assume mining costs of between \$1.10 and \$1.78 per tonne, processing costs of \$0.76 per tonne, general and administrative costs of \$0.23 per tonne, production at the rate of 125,000 tonnes of cathode copper per year, 81% recovery and a copper price of \$0.80 per pound.

Mining costs at Letpadaung may be higher than at S&K if the decision is made to use contract mining in the Letpadaung development plan to offset capital costs. Processing costs at Letpadaung are lower than at S&K based on the Letpadaung development plan's concept of using run-of-mine leaching on the bulk of the ore. General and administrative costs at Letpadaung are lower than at S&K based on the significantly larger scale of the operation.

### ***Mining Operations***

The S&K Mine was designed to produce 25,000 tonnes per annum of LME grade A cathode copper using heap-leach, SX/EW extraction technology. Construction commenced in September, 1997 and JVCo produced its first copper from the mine on November 1, 1998. JVCo's capital cost of the S&K Mine to December 31, 2001 was approximately \$143 million of which \$90 million was provided under a credit facility agreement with Marubeni U.K., PLC and Nissho Iwai Europe, PLC. In August 1999, JVCo completed construction of the S&K Mine, at which time the project loan, previously non-recourse only to ME1, also became non-recourse to Ivanhoe. As of March 31, 2002, JVCo has repaid approximately \$37.5

million in principal against the credit facility and all accrued interest and has accumulated a sufficient cash reserve to make the next semi-annual instalment payment.

The S&K Mine consists of an ore plant and processing related facilities and mining operations on the Sabetaung, Kyisintaung and Sabetaung South deposits. JVCo uses heap leach pads to process the ore.

In the past three years, JVCo's production at the S&K Mine has exceeded the annual target capacity for production of 25,000 tonnes of cathode copper, producing 25,856 tonnes of cathode copper in 2001, 26,699 tonnes of cathode copper in 2000 and 26,736 tonnes of cathode copper in 1999.

JVCo's cash costs for the S&K Mine during 2001 (before inventory allowances) averaged \$0.37 per pound of copper compared to \$0.345 per pound of copper in 2000. Average sales price for cathode copper produced from the mine in 2001 was \$0.73 per pound compared to \$0.82 in 2000.

In 2001, all Sabetaung, Sabetaung South and Kyisintaung exploration drill core was re-logged to determine clay content in order to address an increase in clay content in ores in 2000. The clay content information was incorporated into a computer database, allowing JVCo to generate mine plans, and thereby ensure that clay ores are blended with harder ores so as to ensure maximum percolation of solutions through the heap.

JVCo has developed and implemented an environmental reclamation plan for the S&K Mine. Under the plan, JVCo will perform reclamation procedures during and subsequent to the mine's operating life. Reclamation will be funded by ongoing operating and capital allowances and by an estimated US\$5 million cash accrual during the operating period. This plan has been reviewed and accepted by an independent engineer and adopted by the JVCo Board of Directors.

Environmental management at the site is under the direction of a permanently employed environmental manager. An Environmental, Health & Safety Report ("EHS") for 1999/2000 was prepared by the National Occupational Safety Association Limited ("NOSA") and PPK Environment & Infrastructure Pty Ltd. ("PPK"). These independent organizations have audited the Monywa Copper Project operations and produced a publicly available report. JVCo staff will prepare the EHS in accordance with NOSA and PPK guidelines. Similar reviews will be conducted annually. JVCo achieved ISO 14001 environmental certification for the S&K Mine in January 2001.

### ***Marketing Arrangements***

JVCo is a party to a copper sales agreement dated September 23, 1997 with Marubeni Corporation, of Japan whereunder JVCo has agreed to sell, and Marubeni has agreed to purchase, 25,000 tonnes per annum of cathode copper from the S&K Mine. Sale prices are negotiated from year to year based on the market price of LME Grade A cathode copper. Shipping rates and insurance costs are adjusted annually to reflect actual costs. Marubeni receives a sales commission of one percent (1%) of the negotiated sale price. Throughout the term of the copper sales agreement, Marubeni has the exclusive right to market copper produced from the Monywa Copper Project throughout the world. The copper sales agreement will expire on December 31, 2005 unless, prior to that date, copper shipments to Marubeni exceed 175,000 tonnes or JVCo entirely repays all outstanding Monywa Copper Project construction loans, in which case the agreement will expire on December 31 of the year in which either such event first occurs.

In December, 2001, the London Metals Exchange ("LME") registered cathode copper produced from S&K. LME registration certifies that copper produced from the mine meets LME standards for purity,

shape and weight as specified by its special contract rules. LME registration means that S&K produced copper cathode can be sold at premium prices.

### ***Planned Development Activities***

The Ivanhoe Group plans to develop the Letpadaung deposit as the second phase of the Monywa Copper Project. The Letpadaung development plan contemplates production from the Letpadaung deposit at a rate of 167,000 tonnes per annum. The project has been modelled using an annual production range of 50,000 to 125,000 tonnes of cathode copper over 20 years. A production rate of 125,000 tonnes per annum was determined to maximize the use of the resource and the net present value of the project. The estimated mine gate cash operating costs over the life of the project are estimated to be \$0.35 per pound.

The Letpadaung development plan assumes a conventional truck and shovel open pit mining operation with large electric rope shovels and mechanical drive haul trucks. The pit optimisation analysis carried out in the modelling of the project used costs and production assumptions developed from supplier and mining contractor quotations, information from previously prepared Letpadaung feasibility studies and information from other testwork and studies subsequently available. This data was further evaluated in light of actual operating experience from the S&K Mine's operation.

Fractured rock aquifer systems traverse the deposit, which are hydrologically connected to other nearby water bearing formations. Thus, groundwater inflow will require mitigation procedures to avoid significant impact on the open pit operating costs. An open pit hydrogeological drilling and testing program was completed in late 1997. Acid rock drainage ("ARD") from the pit and waste rock dump could be a major environmental management concern. The basic concepts behind ARD management involve preventing the ARD reaction, restricting migration of ARD products and mitigating ARD leachate. Acidic run-off high in iron will be collected and pumped (along with pit inflow water) to the overflow basin and overflow pond where it can evaporate or be recycled as make up water to the raffinate pond. The water management plan is similar to that currently in place for the S&K Mine except that excess water will be disposed of via a neutralisation plant for discharge to the Chindwin River. This discharge alternative is only a backup solution in case the capacity of the storm water system is overwhelmed by a large storm event. Like the S&K Mine, the Letpadaung project will fundamentally be managed on a zero discharge basis.

The Letpadaung development plan envisages a heap leach facility with capacity to stack up to 17.5 million tonnes per annum of higher grade crushed ore and a parallel lower grade run of mine ("ROM") ore dump being placed under leach at rates, dependent on grade, of up to 30 million tonnes per annum. A phased approach to the construction of the leach pads is expected to minimise up-front capital costs.

Crushed ore, at a 50 millimetre nominal rock size, will be stacked on the leach pads in controlled heap lifts by conveyor stacking operations to a maximum heap height of 78 metres. The planned height of each heap lift will be six metres. The ore is expected to be clean and free draining. Leach cycles will be of 200 days duration with an optimum solution application rate of six litres per hour per square metre.

ROM leach dumps will be created by end tipping from haulage trucks in ten metre lifts up to a maximum heap height of 80 to 90 metres. Leach solution will be sprayed first on the ROM dumps to generate an intermediate grade leach solution which will then be sprayed on the higher grade and faster leaching crushed ore pads to generate the ultimate pregnant leach solution for feed to the solvent extraction plant.

Pregnant solution from the heaps will be concentrated by solvent extraction and the copper will be plated by electrowinning. The solvent extraction plant will treat solution at a rate of 6800 cubic metres per hour

and will incorporate an organic scrub circuit to control iron transfer to the electrowinning circuit. To further control iron build up in the electrowinning circuit, an ion exchange-based iron removal process unit has been included in the design.

Testwork has indicated that the Letpadaung rock types are likely to rapidly become net acid generators. A limestone neutralisation circuit has been included in the design to neutralise solvent extraction plant raffinate to control acid accumulation in the leaching circuit. A representative source of limestone has been identified, sampled, and successfully tested for its acid neutralisation potential. This limestone source is currently being used at the S&K Mine for the same purpose.

In general, the process plant and project development design have been optimised based on the experience of the S&K Mine.

The approach to infrastructure and services has been to allow for Letpadaung facilities to complement those already in existence or being developed as part of the S&K Mine. Onsite facilities to support the mine and process facilities include a mine workshop/warehouse, a plant workshop/warehouse, gatehouse, plant offices, magazine and guardhouse, main control room incorporating wet laboratory for plant chemical analysis, and mobile plant.

Myanmar Electric Power Enterprise (“MEPE”) is responsible for supplying power to the project. The total estimated average power requirement for the project is estimated to be 70 megawatt amperes. The Letpadaung development plan contemplates the installation of a 215 kilometre, 230 kilovolt, 90 megawatt ampere overhead transmission line from Thazi to Letpadaung. Thazi is located south of Mandalay on the main national electricity distribution grid. This connection was chosen after extensive study of power supply options by the Group’s advisors in consultation with MEPE.

As an alternate source of power, JVCo has encouraged several interested parties to study the possibility of building a natural gas or coal-fired power plant in the Monywa area. A Japanese group has funded a study which would involve using local coal from deposits north of Monywa. Several companies are also reviewing the use of domestic sources of natural gas as a fuel source.

Water is to be supplied from wells to be drilled adjacent to the Chindwin River within two to three kilometres of the site. To improve access to the site for the import of supplies and the export of the finished copper product, the Letpadaung development plan contemplates an upgrading of the existing road from Nyaunbingyi to Pakokku. A dock and goods handling facilities will be constructed at Pakokku, which can be operated year round independent of seasonal water levels on the Chindwin River.

The estimated initial capital cost of developing the Letpadaung deposit will be approximately \$389 million. The use of contract mining would reduce the initial capital to \$320 million. Ivanhoe is investigating ways to reduce the initial capital cost of developing Letpadaung including contract mining, leasing of the mining fleet and infrastructural streamlining. Ivanhoe is seeking project financing for the development of the Letpadaung deposit. Non-binding proposals have been received from several sources for financing and development of the project. The parties intend to refine the proposals and seek firm commitments during 2002. Development of the Letpadaung deposit remains subject to Myanmar government approval. Following government approval and receipt of project financing, production at Letpadaung would be scheduled to commence following a twenty-eight month construction period.

## **Savage River Iron Ore Project, Tasmania**

### ***Property Description and Location***

Ivanhoe, through its wholly-owned subsidiary ABM and its subsidiaries (for the purposes of this part, collectively referred to as “ABM”), operates an iron ore (magnetite) mine and produces iron ore pellets and magnetite concentrate at its integrated Savage River and Port Latta facilities in Tasmania, Australia. The Savage River iron ore mining operation is situated on approximately 2,400 hectares of leasehold land, 110 kilometres by paved all-weather road from the City of Burnie on the northwest coast of Tasmania. ABM uses an 83 kilometre pipeline to transport concentrate, in the form of slurry, from Savage River to Port Latta. At Port Latta, ABM processes the bulk of the concentrate into iron ore pellets which are stockpiled and loaded onto ships for delivery to ABM customers.

The Savage River magnetite deposit is located on the northwest coast of Tasmania, within the municipality of Wynyard-Waratah, (latitude 41°29'25”S, longitude 145°12'03”E) at an elevation of 229 metres. The regional terrain is rugged and mountainous, and covered with dense rain forest. Local vegetation includes undisturbed rain forest but in the area of the mine it is mainly wet eucalyptus and acacia with open heathland. The mine and concentrating plant are both in the Savage River valley, with the Savage River flowing through the mine site and ultimately discharging into the Pieman River, which then flows westward to the coast.

The Port Latta pelletising and shiploading facility is located on Sawyer Bay, on Tasmania’s northwestern coast approximately 20 kilometres east of Stanley and 50 kilometres west of Burnie. The pelletising plant is situated on a narrow strip of relatively flat coastal land.

ABM holds the Savage River Project through its indirect subsidiary, Goldamere Pty Ltd. (“Goldamere”). In September 1996, Goldamere entered into an agreement with the State Government of Tasmania pursuant to which Goldamere agreed to carry out a feasibility study respecting the possible redevelopment of mining operations at the Savage River mining site. In December 1996, Goldamere and the Government entered into an asset purchase agreement whereby Goldamere agreed to purchase from the government the assets relating to the Savage River mining operation and the Port Latta pelletising and shiploading facilities for a deferred payment of AUD\$13 million. The government further agreed to indemnify Goldamere against liability resulting from any pre-existing or on-going environmental pollution or contamination caused by past operations.

In May 1, 1997, Goldamere and the government entered into a mining lease for a term of 30 years, whereby Goldamere leased the Savage River iron ore mine site for the purpose of carrying on mining operations. Goldamere agreed to pay annual rent in the form of royalties. The royalty rate comprises an ad valorem royalty of 1.6% of net sales plus an annual profit royalty of a maximum of 40% of the profit margin for the immediately preceding year. The sum of both royalty payments is limited to a maximum of 5% of net sales.

## ***Accessibility, Climate, Local Resources, Infrastructure and Physiography***

### *Accessibility*

The Savage River iron ore mine is relatively isolated, being situated 43 kilometres off the Murchison Highway which links the northwest and western coasts of Tasmania. The nearest major town by road is Burnie (population 20,000) located about 98 kilometres from the mine site.

The Port Latta pelletising and shiploading facilities are located on Sawyer Bay, on Tasmania's northwestern coast approximately 144 kilometres north (by road) of the mine site. The nearest towns are Stanley (population 576), 21 kilometres to the northwest (by road), Smithton (population 3,495), 29 kilometres to the west and Wynyard/Burnie, which lies 59 kilometres to the southeast on the north coast.

### *Climate*

There are no climatic extremes experienced at the Savage River mine site or the Port Latta facilities and few conditions which affect production operations. Mine haulage can be affected by high rainfall and shiploading operations may be delayed by winds above 30 knots. Rainfall distribution in western Tasmania is generally high throughout the year, with June to September being the wettest months and December to March the driest. Drought conditions are rare. Average annual rainfall at the Savage River mine site is 1,953.9 millimetres while average annual rainfall at Stanley and Port Latta are 935.8 millimetres and 940.4 millimetres, respectively.

At Savage River, mean monthly minimum and maximum temperatures range from between 3.5 and 9.3°C in July to between 9.9 and 20.1°C in February. Mean monthly minimum and maximum temperatures at Stanley range from between 6.5 and 12.0°C in July to between 12.9 and 20.6°C in February, and at Port Latta from between 4.8 and 12.5°C in July to between 12.4 and 21.4°C in January. Although not exposed to extreme and persistent winter conditions, the Savage River mine area is subject to an average of 24.6 days of frost and 5.5 days of snow per year. The coastal setting at Stanley experiences an average of 11.3 days of frost per year and no snow.

### *Local Resources and Infrastructure*

All surface rights necessary to carry on mining operations at the Savage River mine site are held on a leasehold basis. The initial mining lease (11M/97), entered into in 1997, has a term of 30 years. Goldamere applied for 4 additional leasehold areas contiguous with its existing leasehold to accommodate all foreseen extensions of the pit on the south ore body and for tailings and waste dump purposes. Mining Lease 2M/2001 was granted on November 7, 2001 for thirty (30) years, to replace 11M/97 and incorporates the additional lease areas into a single mining lease over the operation.

Infrastructure is well established from previous operations and Goldamere has undertaken extensive refurbishment of facilities. Maintenance buildings and offices are appropriate to the needs of the operation. The workforce is generally drawn from local towns in the immediate area, with on-site single status accommodation provided at Savage River on a weekly basis for most employees.

Experienced plant operators, backed by technical and professional staff, run the Savage River processing and plant operations. Activities carried on by previous operators ran continuously for 30 years from 1967. This has resulted in a large pool of experienced operations and maintenance personnel who live in the local

area. Tasmania is considered to be highly liveable location and ABM has had no difficulty in recruiting suitably trained and experienced personnel.

Heavy parts and bulk materials are transported from the mainland by sea to the local port of Burnie. Road access to the mine site is via the all-weather Murchison Highway south from Burnie and thence west to the mine site on a sealed road. Burnie is served by commercial commuter air service from Melbourne several times daily.

Concentrate from the mine is transported in slurry form via an 83 kilometre pipeline to the pelletising plant at Port Latta. Final product pellet shipments are loaded onto bulk carriers at the purpose-built jetty, which can accommodate vessels of up to 125,000 tonnes capacity. The jetty, adjacent to the pellet plant, is equipped with bulk loading facilities and is serviced by tugboats to assist in the berthing of bulk carriers.

Both sites are connected to the Tasmanian power grid and electricity is purchased from Aurora Energy, the Tasmanian power retailer. Available power is sufficient for the project and future expansion. Water supplies to the concentrator operation are plentiful through local established storage dams and reclamation from tailings. Water at Port Latta is reclaimed from the concentrate slurry and is supplemented by a local borefield.

### *Physiography*

The Savage River mine site is located in a steep valley incising the easternmost extension of the Western Ranges physiographic region of central west Tasmania. The mine site lies at an elevation of between 200 and 350 metres in the Savage River valley. The immediate surroundings consist of a series of sub-parallel ridges to the northwest and southeast. Further to the northwest and southeast, the ridges give way to more mountainous terrain with peaks of 700 to 800 metres. Mount Bertha, which peaks at 703 metres and is the highest mountain in the northwest of Tasmania, is located north of the mine site.

The slurry pipeline to Port Latta traverses east of Mount Bertha, climbing from the Savage River mine site for 25 kilometres to an altitude of approximately 520 metres. It then descends over 56 kilometres to the northwestern coastline, crossing the Rapid, Arthur and Black rivers en route. Port Latta itself is located on the foreshore of Sawyer Bay, which is an open, 25 kilometre stretch of coast, protected to the northwest by a headland leading out to North Point and to the east by Rocky Cape.

### *History*

Magnetite mineralization was discovered at Savage River in 1877. For many years, interest in the deposit centred on the copper and gold potential of the area. Adits were developed in the hillsides but no significant base or precious metal mineralization was identified. Exploration of the prospect was carried out by the Bureau of Mineral Resources in 1956, including ground and air magnetometer surveys. In 1957 and 1959, diamond drilling was undertaken.

In 1965, Savage River Mines Limited (“SRM”), a joint venture of Australian, Japanese and United States interests, was formed to develop the Savage River deposit. Open cut mining commenced in 1967 and continued until 1996. A magnetite concentrate was produced and exported, principally to Japan. Between four and six million tonnes of ore were mined per annum producing approximately 1.5 to 2.3 million tonnes of concentrate averaging 67% iron in grade. Over a 30 year period 137 million tonnes of ore were mined and processed and 58 million tonnes of magnetite concentrate was produced, pelletised and exported.

In 1995, SRM decided to close the operation and mining ceased in April 1996. However, in October 1995, Goldamere commenced discussions with the Tasmanian government to take over the Savage River mine site and continue the mining, production and export of pellets. Plans were based on a cut back and expansion of the open pits, a river diversion to provide access to high grade ore, and changes to the mining and ore haulage methods. After various discussions and proposals, Goldamere was granted an Authority to Prospect and commenced an infill and confirmatory drilling programme.

During 1996, Goldamere carried out feasibility studies and entered into a series of agreements with the Tasmanian government to acquire and operate the Savage River mine. See "Property Description and Location". Goldamere commenced site construction work in 1997. A third party contractor was retained to undertake mining and to operate and maintain the conveyor, concentrator, slurry pipeline system, pelletising plant and shiploading facilities. Waste stripping commenced in September 1997 and mining and milling began the following month. Goldamere began replacing the third party contractor's personnel with its own staff and eventually assumed full control of operations in May 1999.

In December 2000, the Corporation acquired all of the issued and outstanding shares of Goldamere's parent, ABM Mining Limited in exchange for common shares of the Corporation.

### ***Geological Setting and Mineralization***

#### *Regional Geology*

The Savage River magnetite deposit lies within and near the eastern margin of the Proterozoic Arthur Metamorphic Complex in northwestern Tasmania. This complex is exposed along a northeast-southwest trending structural corridor, the Arthur Lineament, which separates Proterozoic sedimentary rocks to the northwest from a variety of Palaeozoic rocks to the southeast. The Arthur Metamorphic Complex in the vicinity of Savage River is dominated by the Whyte Schist that is subdivided into an eastern and western sequence. The eastern sequence consists predominantly of quartz-mica rocks including thin micaceous quartzite beds, schist and phyllite. The western sequence is characterised by amphibolite, chlorite and albite schist or quartz-muscovite schist. The grade of metamorphism has been interpreted to range from upper greenschist to amphibolite facies metamorphism.

#### *Local and Property Geology*

The magnetite deposits at the Savage River mine site represent the largest of a series of discontinuous lenses that extend in a narrow belt for some 25 kilometres south of what was formerly the Savage River township. The deposit is subdivided into sections on the basis of areas that have been mined. These areas are referred to as Centre Pit, South Lens and North Pit. A new deposit has been discovered to the south of Centre Pit and is referred to as the South Deposit.

The South Deposit comprises two, elongated lenses of magnetite referred to as the Eastern and Western Zones that strike roughly north to south and extend along strike for up to 400 metres. The magnetite ore bodies are enclosed within a highly sheared and strike-faulted belt of mafic and ultramafic schist and mylonite. The belt is approximately 500 metres in width, strikes north-northeast to south-southwest and is enclosed within the Whyte Schist.

The magnetite ore, which is almost entirely enclosed within ultramafic rocks, specifically serpentinite and talc-carbonate schist, ranges in thickness from 40 to 150 metres in width in what is known as the Main

Ore Zone. The Main Ore Zone has a known strike length of 4 kilometres and can occur as two or more thinner lenses. Down dip continuity is indicated to depths of up to 600 metres.

### *Mineralization*

The Savage River deposits are all relatively similar, comprising sub-vertical north-south striking magnetite lodes within a schist-serpentinite sequence. The mineral occurrence is subdivided into several deposits, based largely on structural breaks in the ore sequence which are reflected in the pit designs. The ore may be massive, layered or disseminated and range from being fine-grained to coarsely crystalline.

Within the main ore zones the magnetite lenses can be massive, or can be associated with varying amounts of gangue minerals. The magnetite ores comprise three volumetrically important groups: pyritic ores, serpentinitic ores and talc-carbonate ores. Pyrite and serpentinite are ubiquitous. Talc, tremolite, actinolite, chlorite, epidote and apatite occur in varying amounts.

Massive magnetite is generally defined as having a Davis Tube Recovery (“DTR”) of greater than 40%. The DTR approximately indicates the percentage of recoverable magnetite in the rock. A lower cut off of 15% DTR is used to define ore. Below this cut off the rocks are considered waste.

### *Exploration, Drilling, Sampling and Analysis*

ABM has surveyed all pits and dumps and the current topography is well defined. All drill hole collars have been surveyed. Down hole surveys have been undertaken to determine the inclination of the holes, but because of the presence of magnetite, standard hole deviation surveying has not been carried out. A check has been carried out on a single hole using a non-magnetic survey method. Relatively minor deviation was recorded. Given the scale of the ore zone, it is not considered that hole deviation will materially affect the total resource or reserve estimates.

ABM has identified two sub-outcropping lodes of magnetite-rich material in the southwest portion of its mining leasehold, approximately 3 kilometres southwest of the plant site. ABM geologists identified the source of the anomaly on the ground and carried out ground magnetic traverses, trenching and mapping. Two north-south striking magnetic lodes, approximately 100 metres apart, have been mapped over a 400 metre strike length. The thickness of the lodes at surface ranges from less than 5 metres to more than 30 metres.

ABM has conducted a diamond drilling programme to establish the true thickness, grade and continuity of the mineralization. Twenty-six diamond drill holes, for a total advance of 4,052 metres, were completed at the South Deposit by December 2001. Two of these holes were drilled to provide whole core samples for metallurgical testwork. Grid drilling was completed at an initial 100 metre by 100 metre grid spacing to broadly define the extent of the magnetite mineralization. Infill drilling was completed at 50 metre by 50 metre grid spacing.

Drilling completed during the fourth quarter 2001 has been directed at defining depth and strike extensions of the magnetite mineralization to the south of the existing resources and reserves on sections 4200N, 4150N, 4100N and 4050N.

ABM supplemented previous SRM drilling with a further 20 holes (approximately 4,000 metres) drilled from June to October 1996. The maximum depth drilled by ABM was 300 metres. Recoveries were generally in excess of 90%. As all the pits were flooded at the time, some of the preferred drill sites were inaccessible. Holes comprised:

- North Pit - five holes to confirm existing geology drilled mainly towards the southern end of the pit.
- South Lens - five holes were drilled mainly between South Lens and North Pit where the Main Ore Zone is relatively thin. Drilling confirmed a sufficient width to justify a cut back of the pit.
- Centre Pit North - two holes confirmed a wide Main Ore Zone, less interrupted by intrusives than previously interpreted.
- Centre Pit South - eight holes were drilled and the previous geological interpretations and ore widths were generally confirmed.

ABM carried out limited additional infill drilling between 1998 and 2001.

Infill diamond drilling was completed during 2001 in the Centre Pit North-South Lens pit areas. Nine diamond drill holes for a total advance of 2,475 metres was completed. The program was designed to improve the geological confidence and upgrade existing resources and reserves previously defined in the area.

Mineralised core samples have been cut by diamond saw and half the core sent for analysis. ABM sampled principally in 2 metre intervals and the core was crushed and split at the Savage River Laboratory and analysed for DTR. These samples were then sent to Port Latta for further chemical analysis. Blast hole cuttings are analysed in situ in the pit using a magnetic susceptibility meter, with some samples collected and assayed to maintain the correct calibration of the meters.

The susceptibility meter values provide a general crosscheck on the DTR results. Scatter plots of the two sets of values show a good correlation. Routine cross checks of DTR values between laboratories have been undertaken, and historically product grades and production reconciliation figures have given confirmation that the sampling and DTR values are generally satisfactory.

Data quality is reasonable. The primary data comprises DTR factors based on diamond drill samples. The DTR values are a measure of the percentage of recoverable magnetite that can be achieved in the magnetite concentration plant. A 95% 'efficiency factor' is applied by the mill to the mine DTR estimates. The database includes holes drilled by SRM and more recent holes drilled by ABM. DTR values are from different source laboratories. Limited cross-checking has been undertaken but available evidence suggests the data is comparable and satisfactory.

SRM carried out a number of density determinations in 1977 and a regression curve was defined based on the DTR value. ABM determined density values on all new diamond drill core to more accurately define the density/DTR relationships in the different areas of the deposit. Waste density is taken as 2.81 tonnes per cubic metre. Ore density ranges from approximately 3 tonnes per cubic metre (20% DTR) to 4 tonnes per cubic metre (70% DTR) and averages approximately 3.5 tonnes per cubic metre (50% DTR).

### ***Mineral Resources and Reserves***

Estimates of reserves and resources at the Savage River iron ore mine are as of December 31, 2001. Resources and reserves are categorized in accordance with the JORC Code. The principles and

procedures of the JORC Code and those of the CIM Standards are closely aligned and mineralization categorized as measured, indicated and inferred resources and as proved and probable reserves under the JORC Code would be reported under identical categories pursuant to CIM Standards. Estimated resources include estimated reserves. Resources which are not reserves do not have demonstrated economic viability.

**Ore Reserves  
December 31, 2001**

<u>Deposit</u>	<u>Proved</u>		<u>Probable</u>		<u>Total</u>	
	Tonnes (millions)	Grade (DTR %)	Tonnes (millions)	Grade (DTR %)	Tonnes (millions)	Grade (DTR %)
Savage River <sup>(1)</sup>	49.5	49.3	39.0	47.2	88.5	48.4

(1) Includes North Pit, Centre Pit and recently drilled areas of the South Deposit.

**Mineral Resources  
December 31, 2001**

<u>Deposit</u>	<u>Measured</u>		<u>Indicated</u>		<u>Total<sup>(1)</sup></u>		<u>Inferred</u>	
	Tonnes (millions)	Grade (DTR %)	Tonnes (millions)	Grade (DTR %)	Tonnes (millions)	Grade (DTR %)	Tonnes (millions)	Grade (DTR %)
Savage River <sup>(2)</sup>	67.3	53.0	65.2	52.0	132.5	52.5	73.7	52.1

(1) Represents aggregate measured and indicated resources excluding inferred resources.

(2) Includes North Pit, Centre Pit and recently drilled areas of the South Deposit.

Historically, SRM estimated the resource using a sectional estimation method. The initial ABM resource estimate was derived by block modelling using an inverse distance cubed grade interpolation algorithm. More recently, geostatistical analysis and kriging methods have been applied. The blocks of the Main Ore Zone fall within a “wire-frame” which has been geologically constrained. Mineralised blocks have been categorised as measured, indicated and inferred resources or proved and probable reserves based primarily on the distance from the nearest drill hole.

The reserve represents that part of the resource which is planned to be mined taking into account economic factors. The reserve at Savage River has been estimated by the conventional process of pit optimization followed by the development of a practical pit design. The optimization stage incorporates prevailing economic factors, such as mining cost and its variation with depth, the grade, processing costs and selling price. The overall slope of the pit walls based on operational geotechnical experience are also entered into the optimizer which generates a series of pit envelopes used as the basis of the pit designs.

Selected pit envelopes are next turned into practical designs that incorporate haulage ramps, ramp grades mining widths, berm widths, batter angles and other practical operational and scheduling considerations. Measured and indicated resources which fall within the final designed pit envelope are categorized as proved and probable reserves and represent that part of the resource planned to be mined. The reserves incorporate expected mining recovery and dilution.

Factors, equivalent to approximately 11% dilution and 95% mining recovery, have been applied to the resource tonnes and DTR. In areas of broad continuous mineralization, losses and dilution may be minimal but will be more significant where zones are thinner or cross-cutting intrusives are common. The factors applied by ABM are consistent with historical data from the Savage River deposit.

### ***Mining Operations***

Mining activities in the open pit involve the use of conventional off-highway rear-dump trucks of 100 to 150 tonnes capacity and hydraulic excavators, with contract drilling and blasting being used to prepare the ground ahead of mining.

Ore processing operations at Savage River comprise primary crushing and stockpiling of crushed ore, followed by autogenous milling, rougher magnetic concentration of magnetite, regrinding of the rougher magnetic concentrate, hydroseparation to remove fine gangue minerals and finisher magnetic separation to produce a final magnetite concentrate which is stored in agitated tanks prior to being pumped to the pellet plant at Port Latta. The pipeline pump station is located at the concentrator. Tailings are thickened prior to pumping to the tailings dam.

ABM's production is controlled by the concentrator capacity. The additional grinding capacity proposed to enable the capacity of the plant to be increased to 2.9 million tonnes per annum, fully utilizing the capacity of the concentrate pipeline has been postponed due to the downturn in demand experienced in the Asia Pacific iron ore market.

The concentrate slurry pipeline is approximately 83 kilometres in length and has an internal diameter of 229 millimetres. Buried sections of the pipe are wrapped and cathodically protected against corrosion. A corrosion inhibitor, pH control and an oxygen scavenger are used to control internal corrosion. Regular surveys in recent years have shown that the rate of wear and corrosion in the line has been reduced to negligible levels.

The Port Latta pellet plant receives the concentrate slurry from the pipeline, thickens and filters it prior to agglomeration into green balls and induration of the balls into fired pellets. The pellets are screened to remove fine chips and coarse pellet clusters and then stored in a yard pending shipment by sea.

The externally fired furnaces were designed to use fuel oil as the plant's energy source. In March 2001 ABM signed a 10 year gas supply agreement with Duke Energy International to supply natural gas to ABM at the Port Latta pellet plant. The gas is to be supplied by marine pipeline across the Bass Strait from Longford in Victoria to Bell Bay in northern Tasmania, where it will supply gas to the Bell Bay power station which is being converted to gas. From here it will have two branch lines, one to Hobart in southern Tasmania and the other to Port Latta in northwestern Tasmania. ABM has committed to switch from fuel oil to natural gas in August 2002 with a commissioning period to be completed in the first quarter of 2003. The potential operating cost savings will be in excess of AUD\$2 to 5 per tonne of pellets, and will provide ABM with a significant competitive advantage compared to the current pricing levels of fuel oil.

Goldamere's operating plan contemplates the production of approximately 2.2 million tonnes of iron ore products in 2002.

### ***Marketing Arrangements***

The bulk of the production from the Savage River Project is sold under long term contracts. Two major customers, The Broken Hill Proprietary Company Limited (“BHP”) and Pohang Steel Australia Pty. Ltd. (“POSA”) take most of the product. Other purchasers on short term annual contracts include Baoshan Steel of China.

Goldamere is a party to an agreement with BHP (the “BHP Sales Agreement”) dated August 1997 for the sale of approximately 750,000 to 1.25 million dry metric tonnes of iron ore pellets during each contract year until the BHP Sales Agreement expires on June 30, 2002. Discussions for a new 5 year contract (July, 2002 to June, 2007) have commenced. All payments under the BHP Sales Agreement are made in U.S. dollars. The base price for the current contract year is set at \$0.4482 for each 1% of iron per dry metric tonne, equating to approximately \$29.36 per metric tonne. Price adjustments are provided for in the BHP Sales Agreement depending on the quality and content of the iron ore pellets.

Goldamere is also a party to an agreement with POSA (the “POSA Sales Agreement”) dated August 1997 for the sale of approximately 500,000 to 700,000 dry long tons of iron ore pellets and 100,000 to 300,000 dry long tons of iron ore concentrate each contract year (April 1 to March 31) until the POSA Sales Agreement expires on November 30, 2002. The price under the POSA Sales Agreement is the price applied to similar products supplied to Japanese steel mills during the corresponding period. The price for the product currently being supplied is \$0.4456 for each 1% of iron per dry metric tonne, equating to approximately \$29.19 per dry metric tonne. Current iron ore pricing negotiations have proceeded slowly with finalisation not expected until the end of the second quarter of 2002.

### ***Planned Development Activities***

Due to the softening of the Asia Pacific iron ore markets and an only marginal increase in pellet prices (1.75% compared to 5% expected), ABM’s planned production expansion program for the Savage River Project was postponed.

An AUD\$2.8 million Automation and Gas Conversion project has been approved for the conversion of all furnaces at Port Latta. This project will modernize the control system to current gas standards, install a gas let down and reticulation system and modify burner trains and fuel guns to allow conversion from fuel oil to gas in August 2002.

A marketing study on the direct marketing of concentrate into the Australian coal wash market is also being undertaken. The coal wash market is a niche market offering high value sales potential for ABM magnetite concentrate.

### **Other Projects**

#### ***Mongolia***

In October 2001 Ivanhoe acquired four new copper-gold porphyry-related exploration projects in Mongolia. The Oyut Ulaan and Chandman Uul prospects are located in southeastern Mongolia and the Oyut Ovoo and Saran Uul prospects are located in central Mongolia.

The Oyut Ulaan prospect consists of two targets, Oyut Ulaan and Stariy. The Oyut Ulaan target, a mineralized tourmaline breccia pipe complex situated in the southwest part of the licence area, has a surface area of 2.5 square kilometres. Intense, secondary copper staining occurs within and at the south margin of the most prominent pipe. Peripheral sheeted quartz-tourmaline chalcopyrite veins occur

northeast and southwest of the pipe and are hosted in Carboniferous granodiorite. Assays for sixteen reconnaissance rock-chip samples were highly anomalous in copper (fourteen samples contained more than 5% copper), molybdenum (30-87 ppm) and gold (up to 0.30 g/t).

The Stariy target is a low-relief area with abundant copper-stained colluvium and subcrops within a five-square-kilometre zone in the north-central part of the licence area. Widespread vein quartz ( $\pm$ magnetite) and gossanous, magnetite-bearing, hydrothermal breccias imply underlying porphyry-type copper-gold systems. Assays for 35 reconnaissance rock-chip samples reported high copper (18 samples ranging between 1-10%), gold (seven samples ranging between 0.25-16.8 g/t) and molybdenum (three samples ranging between 200-709 ppm).

The Chandman Uul prospect consists of a large, copper-bearing, magnetite skarn. The skarn is massive and outcrops extensively as a prominent line of hills over a distance of approximately three kilometres. The skarn is associated with the contact of Proterozoic limestones and Devonian granodioritic intrusions. Assays for 55 reconnaissance rock-chip samples reported high copper (26 samples ranging between 1-8%) and anomalous gold (a maximum of 2.3 g/t). No molybdenum assays were done.

The Saran Uul prospect is a porphyry copper system hosted in upper Carboniferous diorites and syenites. A stockwork quartz-vein zone target has surface dimensions of 1.5 kilometres by 700 metres. The terrain is flat to undulating and much of the area is weathered and leached. Assays from 54 reconnaissance rock-chip samples were highly anomalous in copper (22 samples ranging between 0.1-0.5% and 11 samples ranging between 0.5-5%), gold (six samples ranging between 0.5-4.9 g/t) and molybdenum (14 samples ranging between 100-2000 ppm).

The Oyut Ovoo prospect is centred on a group of prominent hills comprising copper-bearing magnetite skarns and hydrothermal breccia pipes hosted in Permian granitoid stocks. The mineralized zone has a surface area of approximately four square kilometres and is surrounded by recent alluvium. Assays from 43 reconnaissance rock-chip samples reported anomalous values for copper (17 samples ranging between 1-10%), gold (nine samples ranging between 0.3-0.7 g/t) and molybdenum (16 samples ranging between 100ppm and 1%).

Analabs performed the sample preparation and (for consistency) analysis of the rock-chip samples at its regional laboratory in Ulaanbaatar.

Ivanhoe recently acquired an interest in three new exploration licences in the South Gobi region: the Kharmagtai Property, the Shuteen Property and the Ovoot Hyar Property. Ivanhoe holds a MEL over the Kharmagtai Property, but has agreed to convey a 10% interest to an arm's length private company in exchange for exploration data owned by that company in respect of the property. Ivanhoe has the right to earn an 80% interest in both the Shuteen Property and the Ovoot Hyar Property upon completion of a US\$1,500,000 work program over three years on the Shuteen Property and a US\$500,000 work program over one year on the Ovoot Hyar Property, with the remaining 20% interest to be held by an arm's length private company. Ivanhoe acquired exploration data from the previous owner of the respective properties in connection with the transactions. Ivanhoe intends to review this data and based on that review integrate the properties into its exploration program in Mongolia.

### ***South Korea***

Ivanhoe holds a 90% interest in two South Korean mineral projects, Seongsan and Gasado, both located in Chollonamdo Province, in the southwestern part of South Korea.

*Seongsan*

The Seongsan Project contains outcropping, low sulphidation, epithermal gold-silver mineralized systems occurring as veins, breccias, stockworks and zones of silicification along a cumulative strike length of at least 3.2 kilometres. To date, the Ivanhoe Group has identified four low-sulphidation epithermal prospects at Seongsan, which have been designated the Moisan, Eunsan, Kunsan and Hoisan prospects. These vein systems occur within several kilometres of each other and are adjacent to the Seongsan Clay Mine, which is currently owned and operated by a South Korean company.

The Group has discovered gold and silver mineralization on all four prospects of the Seongsan project and has drilled more than 100 diamond drill holes on the property with 49 holes being drilled at Eunsan, 46 holes at Moisan, 6 at Hoisan and 3 at Kunsan. The Group has also performed geological mapping and rock chip sampling and soil sampling at all of these prospects.

The Eunsan prospect, located approximately two kilometres northwest of the Seongsan Clay Mine, is the most advanced prospect of the Seongsan project. The Group has completed an internal resource estimate on the Eunsan prospect, which is estimated to contain an inferred resource of 251,800 tonnes grading 15 g/t gold and 83.8 g/t silver.

The Group has begun pre-production mining operations from a small, high-grade open pit at Eunsan, which was excavated to provide a portal access to high-grade underground ore. The Group has excavated approximately 26,000 tonnes of oxidized gold and silver ore from the pit and stockpiled it for milling, of which approximately 11,000 tonnes contain an estimated gold equivalent grade (silver converted to gold at a 1:65 price ratio) of 1.32 ounces per tonne and approximately 15,000 tonnes contain an estimated gold equivalent grade of 0.26 ounces of per tonne.

The Group has also commenced pre-production of an underground development program. The program will start at the open-pit portal and follow the high-grade main ore shoot identified by its drilling program and also attempt to delineate additional mineralization. Underground mining is expected to commence in the third quarter of 2002. The Group plans to complete more than 1.5 kilometres of tunnelling, cross-cuts and raises by the end of 2002.

In March 2002, the Ivanhoe Group completed construction of a mill and site facilities for milling operations. The milling facility has been located in an area central to all of the prospects, as The Group intends to use the facility to mill ore from the whole Seongsan project. The mill is currently processing the stockpiled open-pit ore from Eunsan, and also plans to mill high-grade ore from the underground mining operations. The mill is expected to process approximately 150 tonnes of ore per day once underground operations reach a commercial scale. The mine will follow a ramp-up schedule, blending stockpiled ore with underground ore. The open-pit ore will be processed over the balance of the year to recover an estimated 9,000 ounces of gold and 400,000 ounces of silver at an estimated cash cost of US\$30 per ounce of gold, using silver as a production credit.

Ivanhoe plans to recover gold and silver using gravity concentration and a flotation circuit to produce gold and silver concentrate. The concentrate will be smelted on site to produce gold bullion and doré bars. Gold recoveries are expected to be approximately 85% from the oxidized surface ore and approximately 95% from the unoxidized underground ore.

The Kunsan prospect is located approximately one kilometre to the northeast of the Seongsan Clay Mine. Surface rock chip assays on the Kunsan prospect are consistently gold-silver anomalous and peak assays

of 8.58 ppm gold and 10.2 ppm silver were obtained. All holes drilled by the Group are gold-silver anomalous and potentially economic gold-silver mineralization was intercepted in three of the holes. The best intercept at Kunsan was a 1.0 metre intercept, which graded 24.02 ppm (0.70 ounces per ton) gold and 70 ppm (2.05 ounces per ton) silver. The Group plans to conduct additional drilling later in 2002.

Mineralization at Moisan can be traced on surface along a 400 metre long and 70 metre high ridge outcrop. Mineralization occurs in veins, breccias, stockwork and zones of flat lying sediments. The best intercept of the drill program was in Hole MS001, which had a 3.05 metre intercept grading 120.13 parts per million ("ppm") gold (3.51 ounces per ton) and 680 ppm silver (19.9 ounces per ton). Additional drilling is currently in progress.

The Hoisan prospect is located one kilometre north of the Kunsan prospect and approximately two kilometres north of the Seongsan Clay Mine. Geological mapping in conjunction with rock chip sampling has revealed consistently anomalous values of gold and silver. A peak assay of 23.8 ppm (0.70 ounces per ton) gold and 119 ppm (3.5 ounces per ton) silver was obtained from a float sample of limonite stained, crystalline comb vein quartz. Soil sampling has defined a coherent +0.1 ppm gold anomaly (maximum 2.89 ppm), which broadly correlates with areas of silicified outcrop and float. Soil sampling is ongoing as crops are harvested from cultivated areas. A scout-drilling program is proposed for this prospect.

### *Gasado*

The Group conducted drilling on the Gasado Island prospect between April and December 1999, drilling eleven holes totalling 1,724 metres on four targets, referred to as the Lighthouse vein, the Lighthouse East vein, the Stork vein and the Spad vein. The best drill results were on the Lighthouse vein, with gold values between the two to five ppm gold and silver values averaging five ounces per tonne. Drilling of the Lighthouse prospect demonstrated continuity of gold and silver mineralization at depth. The Group is conducting a trenching and mapping program and plans to commence further diamond drilling in the second quarter of 2002.

### *Myanmar*

The Group conducts exploration in Myanmar through an exploration agreement with the government of Myanmar. The Group has the right to establish a joint venture with the government of Myanmar in which the Group would hold an 83% interest. Exploration is focussed primarily in Kyauksayit, which is situated in the southern part of the exploration concession known as Block 10, approximately 150 kilometres southeast of Mandalay. The Group has discovered an area of mineralization in Kyauksayit three kilometres long and 1.5 kilometres wide which contains several auriferous quartz veins of mesothermal origin. The Group originally discovered five veins, which are approximately 200 metres apart and hosted by metasediments, with widths varying between 10 centimetres to four metres and thickness between 30 centimetres to 2.7 metres. The Group is exploring the Kyauksayit property through a series of trenches, adits, drives and crosscuts and has discovered gold on the Kyauksayit property, primarily in the quartz veins. The gold is both of primary and secondary origin and occurs as free gold, in vugs and in direct contact with pyrite. The vein system is still open along strike and down-dip and the textural characteristics of the mesothermal veins remain unchanged over a vertical distance of 250 metres.

The gold vein system itself was not discovered until late 2000. Gold mineralization was originally discovered by the Group's geologists in the vicinity of Kyauksayit in April, 1997. New veins with visible

gold were uncovered at four locations in the south and east of the area. The new veins, and the four vein systems with adits, demonstrate that the mineralized structures at Modi Taung lie within a 1,100-metre by 3,000-metre, north-northwest trending zone. The zone is potentially open to the southeast and vein outcrops to the northwest have visible gold. Mineralized veins in adits occur over a 360-metre vertical interval without systematic change in style or grade. The largest vein exposed to date is known as Southwest Zone 3, which has an open-ended strike length of 600 metres. The Group has intercepted the vein with six adits and 26 trenches over a vertical interval of 250 metres. Vein width varies from tens of centimetres up to 4 metres and visible gold can be observed in most of the adit exposures. Unoxidized portions of the vein contain coarse pyrite which has visible gold on fractures and as inclusions in the pyrite aggregates.

The Kyauksayit property is a mesothermal gold deposit, which is difficult to objectively sample due to irregularly distributed coarse gold. Local sampling of the Kyauksayit property shows highly erratic gold values and the Group is using a combination of channel sampling, bulk sampling, panning and visible gold observations to ascertain the economics of the deposit. Deeper drilling will be required in order to determine the resource potential of the site and economics of extraction.

Preliminary metallurgical work indicates gold recoveries of 97% are attainable with conventional processing.

The camp capacity at Modi Taung is being doubled, to accommodate up to 12 aditing teams that use mine explosives below the softer, oxidized zone. Commencing in mid-2002, the Group intends to drill holes at Modi Taung to a depth of 500 metres below adit 1 to test the down-dip continuity of the vein structure.

### ***Kazakhstan***

The Corporation's subsidiary Central Asian Mining Limited ("CAML") holds a 70% interest in a joint venture with the government of Kazakhstan (the "Bakyrchik Mining Venture") to develop the Bakyrchik gold project in northeastern Kazakhstan. The Bakyrchik Mining Venture holds mining and exploration licenses from the government of Kazakhstan covering an area of approximately 86 square kilometres surrounding the existing Bakyrchik gold mine.

The Bakyrchik property is located in the village of Auezov in north-eastern Kazakhstan, about 1,100 kilometres north-east of Almaty, the country's largest city. The site consists of a number of mine shafts and associated facilities, process plant, workshops, warehouses, administration buildings and accommodations.

The gold deposits at Bakyrchik consist of a series of mineralized lenses or lodes lying within a large shear zone, which is 11.5 kilometres in length. Gold mineralization is hosted within sheared carbonaceous sediments of the fault zones, and is principally contained within sulfide mineralization occurring in association with quartz stockworks, which crosscuts and parallels the foliation of the sediments. Mineralogical studies indicate that the majority of the gold is encapsulated by arsenopyrite and to a lesser extent, pyrite. As the associated sediments contain up to 4% carbon, the deposit is said to be "double refractory" in nature, which makes processing very difficult.

The Bakyrchik mine commenced ore production in 1956 to provide gold bearing flux to a copper smelter at Ust-Kamenogorsk and later to smelting facilities in Russia. A total of five shafts were sunk on the Bakyrchik deposit, and the underground has been explored and developed for mining from a series of development drifts driven at 40 metre vertical intervals.

Engineering studies commissioned by the Ivanhoe Group in 1996 and 1997 recommended development of a mining operation capable of producing between 500,000 and 1,000,000 tonnes of ore per annum at a capital cost ranging from \$100 million to \$222 million. However, a precipitous decline in the price of gold in the late 1990s dramatically changed the economic assumptions upon which these engineering studies were based and the Group's development plans for the Bakyrchik gold project were indefinitely postponed. In January 1998, the Group placed the Bakyrchik gold project on care and maintenance status pending a sustained recovery of the price of gold.

The Bakyrchik property contains an outcropping of oxide ore which can be processed without the technical difficulties and costs associated with sulphide ore, which constitutes the bulk of the Bakyrchik deposit. In May 2001, management decided to resume mining of oxide ore on a limited basis as a means of offsetting the annual holding costs of the project.

Mining resumed in the fall of 2001 and focussed initially on processing existing stockpiles containing approximately 117,000 tonnes of oxidized ore. The Group is currently processing the stockpiled oxide ore at a rate of between 400 and 500 tonnes per day. The gold is recovered using the carbon-in-leach recovery method. Initial recoveries of gold from oxide ore were expected to be in the order of 90% but the uneven nature of the stockpiled material has resulted in an average recovery rate to date of approximately 45%. These operational difficulties have now been resolved and future recovery rates are expected to be in the order of 70% to 80%. Depending on whether or not the existing small scale operation achieves the expected recovery rates from the stockpiled material, the Group may extend existing shallow open pits containing oxide ore deposits on the Globoki Log and Sarbas deposits once the stockpiles are exhausted. At this time, management is uncertain as to the ultimate viability of the project.

There can be no assurance that any larger scale production of sulphide ore necessary to generate significant cash flow in excess of the holding costs of the mine can be made economically viable under existing conditions. Even if oxide ore production significantly reduces the annual holding cost of the Bakyrchik gold project, management, in an effort to conserve the Group's cash resources, intends to continue to evaluate other alternatives for effectively eliminating the holding cost of the Bakyrchik gold mine, including a total relinquishment of the Group's interest in the project.

The government of Kazakhstan recently put its 30% interest in the Bakyrchik Mining Venture up for sale and received bids from a number of third parties. In order to protect its own interest in the project, CAML informed the government that it planned to exercise its pre-emptive rights under the relevant project agreements to acquire the government's interest. The government has not, to date, accepted CAML's entitlement to exercise its pre-emptive rights. Discussions between CAML and the government aimed at resolving the issues remain ongoing. In order to preserve its rights should the discussions prove to be unsuccessful, CAML has delivered a notice of dispute to the government, which triggers a formal 30-day negotiation period under the relevant project agreements. CAML has advised the government that it will pursue a variety of remedies should the discussions fail, including arbitration.

There can be no assurance that CAML's discussions with the government concerning the pre-emptive rights will lead to a resolution of the relevant issues nor that any attempt by CAML to enforce its legal rights will effectively protect CAML's investment in the Bakyrchik gold project.

### ***Vietnam***

The Group owns a 32.6% interest in a joint venture with Olympus Pacific Minerals Inc. (“Olympus”) and Zedex Limited (the “Phuoc Son Joint Venture”) to explore and develop two exploration licences in the Phuoc Son area of Vietnam. The Phuoc Son Joint Venture was formed in 1997 in connection with the Group’s sale of its Vietnam assets to Olympus. Olympus is the operator of the joint venture.

Olympus has discovered gold/silver mineralization at Phuoc Son. Olympus has reported that it has identified three parallel mineralized structures on the property. It states that it has directed the Phuoc Son Joint Venture’s drilling program at extending high grade zones of mineralization and delineating mineralization that has a potential mineable resource. By the end of 2001, Olympus reported that it had completed 11,642 metres of drilling, which had intercepted two open-ended structures containing potentially recoverable gold mineralization with significant silver, lead and zinc credits. Olympus drilled 18 drill holes on the Bai Dat structure, and intersected a vein/breccia zone that averages 20.63 g/t gold over a true average thickness of 3.56 metres. In the Bai Go structure, 24 drill holes have intersected a large sheeted vein system. Each hole averages about 3 mineralized intercepts, having an aggregate thickness of 5.16 metres at a weighted average grade of 8.82 g/t gold.

The Phuoc Son Joint Venture recently completed a drilling program at a second property, called Khe Rin, which is believed to have skarn potential. The joint venture completed 2,100 metres of drilling on the property, and assays are pending.

### ***Bjørnevatn***

On December 31, 2000, the Ivanhoe Group acquired the Bjørnevatn iron ore mine located in northern Norway. The mine was previously operated by a company controlled by the Norwegian government, who had closed the mine in April, 1997.

The Group has held the Bjørnevatn iron ore mine on care and maintenance since its acquisition. The Corporation, through its wholly -owned Norwegian subsidiary Arctic Bulk Minerals AS (“Arctic Bulk”), had planned to refurbish the pellet and concentrate production facilities at Bjørnevatn based on a 1998 engineering and cost study. However, during 2001 Arctic Bulk was unable to secure financing from investors to re-start production. The Group decided that, insofar as Bjørnevatn is a non-core asset, its other projects elsewhere in the world should take priority in the Group’s capital expenditure budget. Accordingly, the Group decided that no further expenditures of a material nature should be made in respect of the Bjørnevatn iron ore mine and plans to restart production were postponed indefinitely.

In early 2002, Arctic Bulk was unsuccessful in further deferring its purchase payment obligations to the previous owner of the Bjørnevatn iron ore mine. The Group is currently negotiating a settlement of the obligations, which may include the sale of all of the assets of the Bjørnevatn iron ore mine. Arctic Bulk’s payment obligations are not guaranteed by Ivanhoe and there is no recourse on those obligations to Ivanhoe.

### **Equity Investments**

The Ivanhoe Group is the largest shareholder in Emperor Mines Limited, a public company listed on the Australian Stock Exchange, which owns and operates the Emperor Gold Mine at Vatukoula, Fiji. The Group has two representatives on the Board of Directors of Emperor Mines Limited. The Company owns 15,389,232 Emperor ordinary shares, which represent approximately 17.6% of the outstanding shares.

The Ivanhoe Group also holds 8,845,867 common shares of Olympus, representing approximately 19.4% of the issued and outstanding common shares of Olympus. Olympus' common shares are listed on the TSX Venture Exchange.

In May 2002, the Ivanhoe Group acquired 29,000,000 ordinary shares in the capital of Intec Limited, representing approximately 19.8% of its issued and outstanding share capital. Intec Limited is listed on the Australian Stock Exchange.

In 2002, the Ivanhoe Group exchanged its 5% equity interest in GTL Resources Plc. for 1,265,092 shares in the capital of Resource Investment Trust Plc. Resource Investment Trust Plc.'s shares are listed on the London Stock Exchange.

The following table outlines the equity investments held by the Ivanhoe Group and their quoted market value:

<u>Company</u>	<u>Number of Shares</u>	<u>Value (US\$)</u>
Resource Investment Trust Plc.	1,265,092	\$1,913,452 <sup>(1)</sup>
Emperor Mines Ltd.	15,389,232	\$2,665,786 <sup>(2)</sup>
Olympus Pacific Minerals Inc.	8,845,867	\$4,352,836 <sup>(3)</sup>
Intec Limited	29,000,000	\$3,112,280 <sup>(4)</sup>

(1) Calculated as at January 29, 2002, the date that it was listed on the London Stock Exchange.

(2) Calculated as at December 31, 2001.

(3) Calculated as at January 17, 2002, the date the Group acquired 3,780,000 shares of the Company.

(4) Calculated as at May 2, 2002, the date that it was listed on the Australian Stock Exchange.

### **Exploration Expenditures**

Total exploration and related expenses, categorized by country, for the years 2001 and 2000 were as follows:

<u>Country</u>	<u>2001</u> (US\$ Million)	<u>2000</u> (US\$ Million)
Indonesia	0.2	2.3
Mongolia	3.8	1.0
Kazakhstan	2.6	2.5
Norway	1.1	-
Thailand	0.5	0.6
South Korea	1.7	2.6
Myanmar	<u>1.1</u>	<u>0.5</u>
<b>TOTAL</b>	11.0	9.5

### Human Resources

At December 31, 2001 the Ivanhoe Group had 1,318 employees working at various locations. The Group's proportionate share of employees at its operations, and those partnerships and joint ventures which are accounted for on a proportionate basis, was 971 employees at December 31, 2001. Total employees were allocated as follows:

	Total employees Dec./01	Proportionate share Dec./01
Monywa	693	346
Savage River / Port Latta	257	257
Mongolia	22	22
Bjornevatn	3	3
South Korea	7	7
Bakyrchik	296	296
Exploration	22	22
Head office	18	18
	1,318	971

### Risk Factors

Investment in the common shares of the Corporation involves a significant degree of risk and should be considered speculative due to the nature of the Corporation's business and the present stage of its

development. Prospective investors should carefully review the following factors together with other information contained in this Annual Information Form before making an investment decision.

***Ivanhoe's business in Mongolia may be harmed if the country fails to complete its transition from state socialism and a planned economy to political democracy and a free market economy.***

Since 1990, Mongolia has been in transition from state socialism and a planned economy to a political democracy and a free market economy. Much progress has been made in this transition but much progress remains to be made, particularly with respect to the rule of law. Many laws have been enacted, but in many instances they are neither understood nor enforced. For decades Mongolians have looked to politicians and bureaucrats as the sources of the "law". This has changed in theory, but often not in practice. With respect to most day-to-day activities in Mongolia government civil servants interpret, and often effectively make, the law. This situation is gradually changing but at a relatively slow pace. Laws may be applied in an inconsistent, arbitrary and unfair manner and legal remedies may be uncertain, delayed or unavailable.

***Future amendments to Mongolian laws could weaken, shorten or curtail the Group's mineral exploration rights or make it more difficult or expensive to obtain mining rights and carry out mining.***

Mongolia's Minerals Law was drafted with the assistance of Western legal experts and is regarded as one of the most logical, internally consistent and effective pieces of mining legislation among all of the developing countries of Asia. However, future amendments to the Minerals Law or new legislation covering ostensibly unrelated matters could affect the existing tenure regime under the Minerals Law and harm Ivanhoe's ability to carry on business in Mongolia. Mongolian government civil servants have, in the past, unsuccessfully attempted to introduce amendments to the Minerals Law which would, from the perspective of the international mining industry, be regarded as counterproductive. Future amendments to the Minerals Law or new legislation, if implemented, could vary or abrogate key provisions of the Minerals Law in a manner that impairs the Group's ability to conduct exploration and mining in Mongolia.

***The mineral resources identified on the Oyu Tolgoi Project do not have demonstrated economic viability and the feasibility of mining has not been established.***

The mineral resources identified to date on the Oyu Tolgoi Project are not mineral reserves and do not have demonstrated economic viability. There can be no assurance that mineral reserves will be identified on the property. The feasibility of mining on the Oyu Tolgoi Project has not been, and may never be, established.

***Lack of infrastructure in proximity to the Oyu Tolgoi Project could adversely affect mining feasibility.***

The Oyu Tolgoi Project is located in an extremely remote area which lacks basic infrastructure, including sources of power, water, housing, food and transport. While the Ivanhoe Group has established the limited infrastructure necessary to conduct exploration activities, it would need to establish substantially greater sources of power, water, physical plant and transport infrastructure in the area before it could conduct mining operations. The availability of such sources may adversely affect mining feasibility and will, in any event, require Ivanhoe to arrange significant financing, locate adequate supplies and obtain necessary approvals from national, provincial and regional governments, none of which can be assured.

***The Ivanhoe Group's exploration licences could expire before the Group is ready or able to obtain a mining licence.***

The exploration licences for the Oyu Tolgoi Project expire in less than two years, and renewals of those licences are unavailable under the Minerals Law. Prior to such expiry, Ivanhoe will have to convert the exploration licences to mining licences or risk losing its rights to the Oyu Tolgoi Project. Ivanhoe may not be ready to commence mining activities when the exploration licences expire. Early in 2002, a law on Licences for Business Activities was enacted which has been interpreted by Mongolian bureaucrats as requiring aimag (provincial) government level approval as a condition to the grant of exploration and mining licences. There can be no assurance that Ivanhoe will be able to obtain such approval on acceptable terms or at all when applying for mining licences and exploration licences in the future.

***Economic sanctions imposed by the United States and Canada against Myanmar may adversely affect the Monywa Copper Project.***

In May 1997, the United States government imposed economic sanctions on Myanmar, banning new investments in Myanmar by any United States investor. In August 1997, the Canadian government imposed selective economic sanctions on Myanmar, directed against imports and exports between Canada and Myanmar. These sanctions were imposed based on the United States and Canadian governments' belief that the current government of Myanmar has repressed opposition to the government. While the sanctions in their current form do not affect the Corporation's investments in Myanmar, there can be no assurances that the sanctions will not be broadened or that other countries will not adopt sanctions in the future. The existence of United States sanctions may restrict the ability of United States companies to participate in the Monywa Copper Project. It is not possible to assess whether additional legislation will be enacted by the United States, Canada or elsewhere or, if enacted, will ultimately affect the Corporation or investment in the Corporation.

***The Ivanhoe Group faces geotechnical and development risks at the Monywa Copper Project, including generating capacity shortages and leaching process technical risks.***

Ivanhoe faces a number of potential risks with respect to the proposed development of the Letpadaung deposit and the proposed expansion of the S&K mine as part of the Monywa Copper Project. Myanmar is currently short of the generating capacity necessary to deliver sufficient power to Letpadaung and there can be no assurance that improvements to Myanmar's national power system, sufficient to furnish the required power, will be made on a timely basis or at all. If not, it may be necessary to construct a local source of power which may not be feasible or which may render the project uneconomic.

The high lift leach piles planned for both the S&K mine and the Letpadaung deposit carry technical risks. These risks include geotechnical failure, chemical degradation of the heap material, compaction and loss of permeability, lack of oxygen, excessive iron build-up and excessive acid generation. Manifestation of these risks could adversely affect operating costs.

Although Ivanhoe believes that the Letpadaung pit run ore will exhibit the same heap leaching characteristics as the Sabetaung ore currently being mined at the S&K mine, this assumption cannot be confirmed prior to mining. Different metallurgical characteristics in the Letpadaung deposit, if and to the extent they might exist, could adversely affect the technical feasibility and economics of Ivanhoe's Letpadaung development plans.

***There can be no assurance that the Ivanhoe Group will be capable of raising the additional funding that it needs to carry out its development and exploration objectives.***

The further development and exploration of the various mineral properties in which it holds interests depends upon the Ivanhoe Group's ability to obtain financing through joint ventures, debt financing, equity financing or other means. There is no assurance that the Group will be successful in obtaining required financing as and when needed. Depressed markets for precious and base metals may make it difficult or impossible for the Group to obtain debt financing or equity financing on favourable terms or at all. The Group operates in a region of the world that is prone to economic and political upheaval and certain mineral properties held by the Group are located in politically and economically unstable countries, which may make it more difficult for the Group to obtain debt financing from project lenders. The Ivanhoe Group must arrange significant project financing for development of the Oyu Tolgoi Project and the Letpadaung phase of the Monywa Copper Project. Failure to obtain additional financing on a timely basis may cause the Group to postpone its development plans, forfeit rights in some or all of its properties or joint ventures or reduce or terminate some or all of its operations.

***The Ivanhoe Group has a limited customer base for its products and needs to secure additional markets.***

The Savage River Project has only a few customers and the pricing of its iron ore products is subject to annual negotiations. Demand for ABM's iron ore products can fluctuate based on market conditions in the international steel industry. ABM's supply contracts with its two principal customers expire this year, and it must negotiate renewals of these contracts in order to secure these customers. The loss of a key customer or a material decrease in sales to a key customer could have an adverse impact on short to medium term cash flow and adversely affect the project's economic viability.

All of the Group's production from the Monywa Copper Project is sold to a single Japanese buyer. If, for any reason, the Group was unable to sell all of its production to its existing buyer, economic sanctions against trade with Myanmar may significantly reduce the number of potential alternative buyers.

***The Savage River Project is dependent on older process facilities and pipeline operations which may be prone to failure or breakdown.***

Savage River operations are heavily dependent upon the successful operation of the concentrator and pipeline apparatus. All the process facilities and the pipeline have been in operation for over 30 years and are subject to potentially higher rates of failure than a new plant. Despite a comprehensive maintenance

program there can be no assurance that the operating availabilities required to achieve planned product output can be sustained.

***There is a risk of long term decline in pellet grade at the Savage River Project.***

Since inception in 1967, the grade of Savage River iron pellets has declined as mining was extended to deeper levels in the pit and as the pit was extended northwards. Ivanhoe has had geological and mineralogical data independently examined and the preliminary opinion is that this trend will not continue in the future. However, there can be no assurance that a long term decline in pellet grade, which may affect marketability, will not occur.

***The pit wall of the Savage River pit requires additional work to ensure its stability.***

The stability of the walls of the Savage River open pit have, historically, been problematic. Although the Corporation has retained expert advice in this area and is pro-actively managing the pit wall stability, there can be no assurance that a failure, large enough to cause an extended interruption in production, will not occur during the life of the project.

***Legal uncertainty may adversely affect the Ivanhoe Group's activities in Kazakhstan.***

The Bakyrchik gold project, originally a wholly-owned enterprise of the government of Kazakhstan, was privatized under the country's privatization, foreign investment and mining laws, which are intended, among other things, to provide legislative protection against expropriation without proper compensation and the retroactive application of new laws. Although the legislation is consistent with the government's expressed intention of attracting foreign investment, the country's relatively short legislative, judicial and administrative history make it difficult or impossible to predict how these laws will be interpreted in a given set of circumstances.

Certain laws contain inconsistencies and contradictions. Many of them are structured to bestow on government bureaucrats substantial administrative discretion in their application and enforcement with the result that the laws are subject to changing and different interpretations. As such, even the Corporation's best efforts to comply with the laws may not result in effective compliance in the determination of government bureaucrats who have, in the past, interfered with CAML's ability to carry on business in Kazakhstan through arbitrary and capricious interpretations and enforcement of relevant laws and project agreement terms, thereby damaging the commercial value of the Bakyrchik gold project.

CAML is currently involved in discussions with the government aimed at resolving a dispute concerning the interpretation of a fundamental provision of Kazakhstani law involving rights of first refusals in limited liability partnerships. CAML's position is that the government's purported sale of its 30% interest in the project triggered a right of first refusal in favour of CAML. The government's position is that the right is inapplicable to the circumstances of its purported sale. If the government prevails in its interpretation, which CAML believes is completely without merit, the integrity of all of the legislation and agreements under which CAML holds its interest in the Bakyrchik project will be potentially vulnerable. CAML has advised the government that if the ongoing discussions do not yield a satisfactory result, it will pursue a variety of remedies, including international arbitration, although there can be no assurance that any such remedy will effectively protect CAML's legal position in Kazakhstan.

***There can be no assurance that the interest held by the Ivanhoe Group in its exploration, development and mining properties is free from defects nor that material contractual arrangements between the Group and entities owned or controlled by foreign governments will not be unilaterally altered or revoked.***

The Group has investigated its rights to explore and exploit its various properties and, to the best of its knowledge, those rights are in good standing but no assurance can be given that such rights will not be revoked, or significantly altered, to the detriment of the Group. There can also be no assurance that the Group's rights will not be challenged or impugned by third parties. The Group has also applied for rights to explore, develop and mine various properties, but there is no certainty that such rights, or any additional rights applied for, will be granted on terms satisfactory to the Group or at all.

***Competition for new mining properties by larger, more established companies may prevent Ivanhoe from acquiring interests in additional properties or mining operations.***

Significant and increasing competition exists for mineral acquisition opportunities throughout the world. As a result of this competition, some of which is with large, better established mining companies with substantial capabilities and greater financial and technical resources, the Ivanhoe Group may be unable to acquire rights to exploit additional attractive mining properties on terms it considers acceptable. Accordingly, there can be no assurance that the Group will acquire any interest in additional operations that would yield reserves or result in commercial mining operations.

***Ivanhoe has a limited operating history, and there is no assurance that it will be capable of consistently producing positive cash flows.***

The Corporation has paid no dividends on its common shares since incorporation and does not anticipate doing so in the foreseeable future. The Ivanhoe Group only recently began to generate positive cash flow from its Monywa Copper Project and is currently producing negative cash flows from the Savage River Project and its other exploration and development projects. Ivanhoe has a limited operating history and there can be no assurance of its ability to operate its projects profitably. While the Ivanhoe Group may in the future generate additional working capital through the operation, development, sale or possible syndication of its properties, there is no assurance that the Group will be capable of producing positive cash flow on a consistent basis or that any such funds will be available for exploration and development programs.

***A substantial portion of the Ivanhoe Group's operations involve exploration and development and there is no guarantee that any such activity will result in commercial production of mineral deposits.***

None of the exploration properties in which the Ivanhoe Group holds an interest host a known body of commercial ore and proposed programs on such properties are exploratory in nature. Development of these mineral properties is contingent upon obtaining satisfactory exploration results. Mineral exploration and development involves substantial expenses and a high degree of risk, which even a combination of experience, knowledge and careful evaluation may not be able to adequately mitigate. There is no assurance that commercial quantities of ore will be discovered on any of the Group's exploration properties. There is also no assurance that, even if commercial quantities of ore are discovered, a mineral property will be brought into commercial production. The discovery of mineral deposits is dependent upon a number of factors not the least of which is the technical skill of the exploration personnel involved. The commercial viability of a mineral deposit, once discovered, is also dependent upon a number of factors, some of which are the particular attributes of the deposit, such as size, grade and proximity to infrastructure, metal prices and government regulations, including regulations relating to royalties, allowable production, importing and exporting of minerals, and environmental protection. In addition, assuming discovery of a commercial ore body, depending on the type of mining operation involved, several years can

elapse from the initial phase of drilling until commercial operations are commenced. Most of the above factors are beyond the control of Ivanhoe.

***Mining operations are subject to numerous hazards that could have a material adverse effect on the financial position of Ivanhoe.***

The business of mining is subject to a variety of risks such as ground fall, explosions and other accidents, flooding, environmental hazards, the discharge of toxic chemicals and other risks. Such occurrences, against which the Ivanhoe Group cannot, or may elect not to, insure, may result in destruction of mines and other production facilities, damage to life and property, environmental damage, delayed production, increased production costs and possible legal liability for any and all damages. Such liabilities may have a material adverse effect on Ivanhoe's financial position.

***Calculation of reserves and metal recovery is only an estimate, and there can be no assurance about the quantity and grade of minerals until reserves or resources are actually mined.***

There is a degree of uncertainty attributable to the calculation of reserves, resources and corresponding grades being mined or dedicated to future production. Until reserves or resources are actually mined and processed, the quantity of reserves or resources and grades must be considered as estimates only. In addition, the quantity of reserves or resources may vary depending on metal prices. Any material change in the quantity of reserves, resources, grade or stripping ratio may affect the economic viability of Ivanhoe's properties. In addition, there can be no assurance that metal recoveries in small-scale laboratory tests will be duplicated in larger scale tests under on-site conditions or during production.

***Fluctuations in currency exchange rates and debt restructuring may adversely affect the Corporation's financial position.***

Fluctuations in currency exchange rates, particularly operating costs denominated in currencies other than United States dollars, may significantly impact Ivanhoe's financial position and results. The Group receives United States dollars from the bulk of its sales of iron ore products but pays most of its operating costs in Australian dollars. The Group therefore faces risks associated with fluctuations in Australian currency relative to United States currency.

ABM agreed to forward sell \$5 million in currency each month from January 2000 to February 2003, at \$0.6817 per one Australian dollar. The Australian dollar's exchange rate to United States dollars has been substantially lower than the negotiated forward sale rate since 2000. This has resulted in a significant cash outflow by ABM each month to cover the deficiency between the actual Australian exchange rate and the forward sale rate. ABM negotiated short-term relief from this obligation in September, 2001 pursuant to which its lender has converted the net amount owing under the forward sale obligation to long-term debt. However, ABM may be forced to recommence paying the currency hedge outflows at any time. ABM is attempting to restructure financing terms with its lenders on a long-term basis (for a description refer to the Corporation's MD&A). The results of the restructuring of financing terms will have a substantial impact on the financial viability of ABM. If ABM is unable to derive these funds from normal operations, it would be forced to acquire United States dollars at a rate different than that forward sold. Prior to March, 2003, a strengthening of the Australian currency would be detrimental to the Savage River operations for monthly expenditures in excess of \$5 million. After February, 2003, a strengthening of the Australian currency would be detrimental to the Savage River operation to the extent of all monthly expenditures.

***Certain Ivanhoe Group indebtedness is subject to floating interest rates.***

The majority of the Ivanhoe Group's indebtedness accrues interest at a floating interest rate. As a result, fluctuations in interest rates may have a significant impact on the profitability of the Group's mining operations, and on the Group's ability to successfully finance the development of its development projects.

***Metal prices are volatile.***

The mining industry is intensely competitive and there is no assurance that, even if commercial quantities of a mineral resource are discovered, a profitable market will exist for the sale of same. There can be no assurance that metal prices will be such that the Ivanhoe Group's properties can be mined at a profit. Factors beyond the control of the Ivanhoe Group may affect the marketability of any minerals discovered. Metal prices are subject to volatile price changes from a variety of factors including international economic and political trends, expectations of inflation, global and regional demand, currency exchange fluctuations, interest rates and global or regional consumption patterns, speculative activities and increased production due to improved mining and production methods. The supply of, and demand for, Ivanhoe's principal products, iron ore and copper, is affected by various factors, including political events, economic conditions and production costs.

Unlike most metals, iron ores are not fungible commodities, as each is somewhat different in composition and usage characteristics. The iron ore market behaves like a product, rather than a commodity, market, with zones of competition and zones of exclusion. The market is one of direct customer to producer relationships, without middlemen, warehousing or buffer stocks, speculators or futures market. The market is imperfect and oligopolistic. Prices are not set by the market clearance principle, but to optimize returns to producers within the constraint of the total market size.

***The Ivanhoe Group is exposed to risks of changing political stability and government regulation in the countries in which it operates.***

The Group holds mineral interests in countries which may be affected in varying degrees by political stability, government regulations relating to the mining industry and foreign investment therein, and the policies of other nations in respect of these countries. Any changes in regulations or shifts in political conditions are beyond the control of the Group and may adversely affect its business. The Group's operations may be affected in varying degrees by government regulations, including those with respect to restrictions on production, price controls, export controls, income taxes, expropriation of property, employment, land use, water use, environmental legislation and mine safety. In certain areas where the Group is active, the regulatory environment is in a state of continuing change, and new laws, regulations and requirements may be retroactive in their effect and implementation. The Group's operations may also be affected in varying degrees by political and economic instability, economic or other sanctions imposed by other nations, terrorism, military repression, crime, extreme fluctuations in currency exchange rates and high inflation.

***The Ivanhoe Group is subject to substantial environmental and other regulatory requirements and such regulations are becoming more stringent. Non-compliance with such regulations, either through current or future operations or a pre-existing condition could materially adversely affect Ivanhoe.***

All phases of the Group's operations are subject to environmental regulations in the various jurisdictions in which it operates. Environmental legislation is evolving in a manner which will require stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and a heightened degree of responsibility for companies and their officers, directors and employees. There is no assurance that future changes in environmental regulation, if any, will not adversely affect the Group's operations. Environmental hazards may exist on the properties in which the Group holds interests which are presently unknown to the Group and which have been caused by previous or existing owners or operators of the properties.

Government approvals and permits are sometimes required in connection with the Group's operations. To the extent such approvals are required and not obtained, the Group may be delayed or prohibited from proceeding with planned exploration or development of mineral properties.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions thereunder, including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions. Parties engaged in mining operations may be required to compensate those suffering loss or damage by reason of the mining activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

Amendments to current laws, regulations and permits governing operations and activities of mining companies, or more stringent implementation thereof, could have a material adverse impact on Ivanhoe and cause increases in capital expenditures or production costs or reductions in levels of production at producing properties or require abandonment or delays in development of new mining properties.

***Previous mining operations may have caused environmental damage at Ivanhoe Group mining sites, and if the Group cannot prove that it was caused by such prior operators, its indemnities and exemptions from liability may not be effective.***

The Group has received exemptions from liability from relevant governmental authorities for environmental damage caused by previous mining operations at the Savage River Project and the Monywa Copper Project. There is a risk, however, that, if an environmental accident occurred at those sites, it may be difficult or impossible to assess the extent to which environmental damage was caused by the Group's activities or the activities of previous operators. In that event, the indemnities could be ineffective and possibly worthless.

***The Ivanhoe Group's prospects depend on its ability to attract and retain key personnel.***

Recruiting and retaining qualified personnel is critical to the Group's success. The number of persons skilled in the acquisition, exploration and development of mining properties is limited and competition for such persons is intense. The Corporation believes that it has been successful in recruiting excellent personnel to meet its corporate objectives but, as the Group's business activity grows, it will require additional key financial, administrative, mining, marketing and public relations personnel as well as additional staff on the operations side. Although the Corporation believes that it will be successful in attracting and retaining qualified personnel, there can be no assurance of such success.

*Certain directors of Ivanhoe are directors or officers of, or have significant shareholdings in other mineral resource companies and there is the potential that such directors will encounter conflicts of interest with the Group.*

Certain of the directors of the Corporation are directors or officers of, or have significant shareholdings in, other mineral resource companies and, to the extent that such other companies may participate in ventures in which the Ivanhoe Group may participate, the directors of Ivanhoe may have a conflict of interest in negotiating and concluding terms respecting the extent of such participation. Such other companies may also compete with the Group for the acquisition of mineral property rights. In the event that any such conflict of interest arises, a director who has such a conflict will disclose the conflict to a meeting of the directors of the Corporation and will abstain from voting for or against the approval of such a participation or such terms. In appropriate cases, Ivanhoe will establish a special committee of independent directors to review a matter in which several directors, or management, may have a conflict. From time to time, several companies may participate in the acquisition, exploration and development of natural resource properties thereby allowing their participation in larger programs, permitting involvement in a greater number of programs and reducing financial exposure in respect of any one program. It may also occur that a particular company will assign all or a portion of its interest in a particular program to another of these companies due to the financial position of the company making the assignment. In accordance with the laws of the Yukon, the directors of the Corporation are required to act honestly, in good faith and in the best interests of the Corporation. In determining whether or not the Group will participate in a particular program and the interest therein to be acquired by it, the directors will primarily consider the potential benefits to Ivanhoe, the degree of risk to which Ivanhoe may be exposed and its financial position at that time.

## **ITEM 5:      SELECTED CONSOLIDATED FINANCIAL INFORMATION**

The following table shows selected consolidated financial information related to the Corporation for the periods indicated:

	<b>Selected Annual Information</b>		
	<b>(stated in thousand of U.S. dollars except per share information)</b>		
	Year ended December 31		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
Revenues	75,334	22,470	20,579
Loss from continuing operations	84,998	17,860	7,607
Loss from continuing operations per share	\$0.66	\$0.24	\$0.10
Total Assets	247,602	316,359	206,206
Long-term debt	46,533	75,726	37,500
Net Loss	84,998	17,860	7,607
Net Loss per share	\$0.66	\$0.24	\$0.10

### **Dividend Policy**

The Corporation has not paid any dividends on its outstanding common shares since its inception and does not anticipate that it will do so in the foreseeable future. The declaration of dividends on the common shares of the Corporation is within the discretion of the Corporation's Board of Directors and will depend upon their assessment of, among other factors, earnings, capital requirements and the operating and financial condition of the Corporation. At the present time, the Corporation's anticipated capital requirements are such that it intends to follow a policy of retaining earnings in order to finance further development of its business.

The Corporation is restricted in its ability to pay dividends on its common shares by limitations under the *Business Corporations Act* (Yukon) relating to the sufficiency of profits from which dividends may be paid.

## **ITEM 6: MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

### **Overview**

Between May 2000 and December 2001, the Company drilled in excess of 25,000 meters on its Oyu Tolgoi property. In 2001 the Company spent a total of \$3.8 million in Mongolia, including \$3.4 million on its Oyu Tolgoi property. On the strength of exploration results to date on its Mongolian properties, the Company raised a total of \$72.7 million through the issue of 44.6 million common shares or securities convertible into common shares of the Company during the second half of 2001 and through the 2002 year to date. These financings will enable the Company to further advance the exploration of the properties.

The net loss for the year was \$85.0 million, or \$0.66 per share, compared with \$17.9 million or \$0.24 per share in 2000. Included in the 2001 loss is:

- a profit of \$2.5 million from the S&K Mine copper operations in Myanmar.
- a loss of \$66.2 million from the Savage River Mine operation in Australia, including a \$53.8 million write-down of the Savage River Mine assets and a foreign exchange loss of \$7.9 million. The revaluation of the mine assets was necessitated by the effects of the softening of world iron ore markets in 2001 on the economics of the mine.
- exploration division expenses, net after tax, of \$6.3 million including total expenditures of \$3.8 million in Mongolia .
- corporate expenses of \$15.0 million, including \$3.7 million of mining property care and maintenance costs in Kazakhstan and Norway, a \$5.4 million write-down of Norway assets and \$5.7 million of general and administrative expenses.

In the fourth quarter of 2001, the Company initiated the construction of a 150 tonne a day gold and silver operation at its Eunsan project in South Korea. The Eunsan Gold and Silver Mine, which is being developed at an estimated cost of \$3.3 million, started its milling operation in the first quarter of 2002 and is scheduled to reach full commercial production during the second quarter of 2002.

In the third quarter of 2001, the Company reinstated gold production at its Bakyrchik property in Kazakhstan. The economics of the project are being tested on oxidized ore material stockpiled on surface from previous operations. If successful, the Company plans, beginning in the middle of 2002, to start contract mining 500 tonnes a day of oxidized ore from shallow satellite deposits.

The Company is continuing to hold project financing negotiations on its Letpadaung Copper project in 2002.

The Company plans to abandon its interest in its Norway project in 2002.

**Results of Operations**

## Financial Data

(\$ in millions, except per share data)

	<u>Year ended December 31,</u>	
	<u>2001</u>	<u>2002</u>
Earnings and cash flow		
Revenue	75.3	22.5
Mine operation income (after depreciation and depletion, but before inventory allowances)	10.0	10.0
Net loss	85.0	17.9
Cash used for operations	(13.2)	(3.5)
Loss per share	0.66	0.24
Capital Expenditures and Investments		
Capital expenditures	11.5	2.7
Acquisitions of subsidiary and investments	-	(0.2)
Cash acquired on acquisition of subsidiary	-	1.6
Balance Sheet		
Cash	25.8	40.4
Working capital	5.7	30.5
Total assets	247.6	316.4
Long-term debt, less current portion	46.5	75.7
Shareholders' equity	130.2	177.9
Debt to equity ratio		0.52 to 1.00
1.00		0.49 to
Common shares outstanding (millions)	171.2	124.8

## Critical Accounting Policies

Management is required to make assumptions and estimates that affect the valuation of its mineral assets. Significant estimates used in the valuation of mineral assets include quantities of mineral in heaps and in circuit, proven and probable ore reserves, the estimated recoverable tonnes of ore, the expected economic life of and the estimated future operating results and net cash flows from mining property, plant and equipment, and the anticipated reclamation costs of mine sites.

Following generally accepted accounting principles, decreases in the valuation of mineral assets must be recorded in the Company's consolidated financial statements, while increases in the valuation of mineral assets are not permitted. The most likely changes in estimates used in the valuation of mineral assets are the changes in estimates based on noticeable changes in trends of operating costs and commodity prices. A small percentage change in costs or revenues, when spread over the remaining life of a mining project, that can exceed twenty years, can have a significant impact on the valuation calculation, resulting in a material reduction in the valuation of the Company's mineral assets.

Based on Company's evaluation of the events of 2001 and the negative outlook for iron ore and pellet prices, the Savage River Mine assets were written-down by \$53.8 million. See discussion on the Iron operation.

## Operations

### *Copper operation*

The production and sales for 2001 and 2000 are shown in the table below:

#### COPPER

S&K MINE, MYANMAR  
Year ended December 31, 2001

	Total Operation			Company's 50% net share		
	2001	2000	Percent Increase (decrease)	2001	2000	Percent Increase (decrease)
Tonnes of ore to heap	Tonnes (000's)	7,781	6,880			
Grade	Cu/Cn %	0.58%	0.67%			(13%)
Strip ratio	Waste/Ore	0.32	0.52			(38%)
Cathode production	Tonnes	25,806	26,409	12,903	13,205	(2%)
Sales	Tonnes	25,865	26,560	12,933	13,280	(3%)
	US\$/pound			\$0.73	\$0.81	(10%)
	US\$(000)			19,556	22,470	(13%)
Cost of operations	US\$(000)			9,246	8,188	13%

The net income in 2001 was \$2.5 million compared to \$3.4 million in 2000. This decrease was primarily the result of a 13% percent decrease in copper sales which resulted from a 2% reduction in copper production combined with a 10% decrease in copper prices. Copper production was negatively affected during the first three quarters of 2001 by slow leaching of clay-bearing ore material. Copper production dropped from an annualized production rate of 28,000 tonnes per annum in the first quarter of 2001 to a low of 21,000 tonnes per annum at the end of September 2001.

In the last quarter of 2001, improvements instigated by mine management, including tighter ore control in the pit, construction of a fines screening and washing plant to remove clay fines from the ore, re-mining of poorly leached cells and increased leaching of run of mine material, increased the annualized copper

cathode production rate. Total copper production gradually increased from September 2001 onward and reached an average annualized rate in excess of 30,000 tonnes per year during the month of March 2002.

The bulk of the \$1.1 million increase in operating costs is attributable to the increase in the following expenses:

	Annual Increase \$(000)	Percent increase
Wages	145	11%
Fuel	144	27%
Power	111	5%
Mill consumables	273	10%

### *Iron operation*

Production and sales of iron products during 2001 are shown in the table below. The acquisition of the iron operation was completed effective December 31, 2000. The year 2000 comparative operating results are presented on a pro forma basis as if the iron operation had been acquired at the beginning of 2000.

## **IRON**

SAVAGE RIVER MINE, TASMANIA  
Year ended December 31, 2001

		2001	Pro Forma 2000	Percent Increase (decrease)
Tonnes milled	(000's)	4,865	4,536	7%
Concentrate production	(000's)	2,064	2,171	(5%)
Grade	DTR %	44.7%	50.4%	(11%)
Pellet production	Tonnes	2,024,285	2,065,529	(2%)
Pellet sales	Tonnes	1,820,699	2,121,790	(14%)
Sales	US\$/tonne	\$31	\$29	7%
	US\$(000)	55,778	60,823	(8%)

Total pellet production in 2001 was 2% below 2000 production, however, total pellet tonnage sold in 2001 was 14% below the amount sold during the previous year. The approximate 300,000 tonne decrease can be attributed to the following: (a) a 200,000 tonne increase in pellet inventory at December 2001 over the previous year end and, (b) a 100,000 tonne decrease in pellet shipments in December 2001 caused by

customers deferring December shipments into January 2002. As a result, January 2002 pellet sales totalled 275,000 tonnes compared to 75,000 tonnes in December 2001.

Unusually hard ore encountered during mining in the second quarter of 2001 required management to almost double the mine's low-grade run of mine inventory, from 1.2 million tonnes at the end of 2000 to 2.0 million tonnes at December 2001, in order to increase the mill's ability to successfully blend feed material as needed.

Operating and maintenance costs in 2001 were about 7% higher than in the previous year. Maintenance costs in 2001 were approximately 30% higher, mainly as a result of an overall increase in mechanical repairs necessitated by the processing of the unusually hard ore.

Operating profit totalled \$3.7 million for the 2001 year compared to \$2.9 million for the nine months ended September 31, 2001. The net operating income before non-cash expenses, including depreciation and depletion, write-down of capital assets, loss on foreign exchange and income taxes, totalled \$6.2 million at the end of September 2001 and \$5.1 million for the 2001 year. A \$2.6 million write-down of run of mine inventory at the end of 2001 contributed to the \$1.1 million decrease in profit over the previous quarter.

Capital expenditures during 2001 totalled \$ 8.1 million. The Savage River mine received a total of \$10.4 million in funding during 2001 from the Company.

The Savage River operations were acquired in December 31, 2000 based on the assumption that the operation would experience increases in pellet prices of 14% over the 2000 prices over the first three years following the acquisition. As a result, during the same three-year period, an expansion of the plant facilities was envisaged, with a resulting 27% increase in tonnage sold by the end of 2003.

In the second quarter of 2001, the global steel industry experienced a sharp slowdown which resulted in a reduced demand for iron ore pellets. The first indication of softening of iron ore markets came in mid-2001 when the increase in pellet prices for the 2001 year was negotiated at 1.75% rather than the expected 5%. This softening in demand was followed in August by the cancellation of several pellet shipments from ABM customers.

Tariffs, in some cases up to 30 percent, imposed during the first quarter of 2002 on steel exported to the United States are negatively affecting ongoing 2002 price negotiations. Current market expectations are that these negotiations, which should conclude in the second quarter of 2002, will result in a decrease in pellet prices of between 5% and 8%.

In view of this downturn and continuing negative trend in world iron markets, the Company is shelving its original plans to incrementally increase, over a period of two years, total iron production from the current 2.0 million tonnes per annum to 2.9 million tonnes per annum.

Based on Company's evaluation of the events of 2001 and the negative outlook for iron ore and pellet prices, the Savage River Mine assets were written-down by \$53.8 million, and future income tax assets associated with the mine's cumulative net operating losses at September 30, 2001 were also written off.

## **Other Projects**

### ***Letpadaung Copper Project, Myanmar***

During the first half of 2001, the Company completed a major power study for the Letpadaung project to identify viable sources of power in order to support ongoing project financing negotiations with potential lenders. During the last quarter of 2001, various parties interested in the financing and development of the Letpadaung project were approached with a request for a formal financing proposal. The Company may sell a portion of its interest in the project in connection with a project financing transaction. No major expenditures are expected on the project pending the successful conclusion of project financing negotiations.

### ***Eunsan Gold and Silver Mine, South Korea***

During the first quarter of 2002, the Company completed the construction of a 150 tonne per day gold and silver plant at its Eunsan project in the south-western region of South Korea. During this period, a 100,000 tonne open pit was also excavated to provide portal access for underground development and production as well as the establishment of a stockpile of approximately 26,000 tonnes of high-grade gold and silver ore. The mill became operational at the end of March 2002 and is scheduled to start full commercial production in May 2002. A seven-month, \$2.0 million underground development program began in March 2002.

During 2002, the total cost of the project, including construction, open pit pre-production and underground development costs, is estimated at approximately \$3.3 million. During the underground development program, the Eunsan mine is expected to produce up to 8,500 ounces of gold and up to 350,000 ounces of silver from ore previously stockpiled on surface. Reserve and resources estimates will be prepared at the end of 2002, following completion of the underground development program.

### ***Bakyrchik Gold Mine, Kazakhstan***

Gold production at the Bakyrchik property in Kazakhstan was reactivated in the last quarter of 2001 and the Company poured its first gold dore bars from Bakyrchik at the end of October 2001. Processing inventories of oxidized gold bearing ore stockpiled during previous operations, the Company produced a total of 910 ounces of gold from Bakyrchik during the fourth quarter of 2001. The main purpose in reactivating the Bakyrchik operation is to evaluate the ability of the existing plant facilities to produce gold on an economic basis. Revenues generated in the fourth quarter of 2001 from mine activities were netted against the mine's care and maintenance costs. The process plant experienced difficulties in its recovery of gold pregnant carbon solutions and management is presently working on rectifying and improving the plant's gold circuit recoveries.

As a result of well-executed care and maintenance efforts in prior years, total capital costs required to restart the small scale oxide operation were less than \$300,000. These costs have been expensed and added to the total care and maintenance costs for 2001, which were \$2.6 million compared to \$2.5 million in 2000.

If satisfactory gold recoveries can be established during the first half of 2002, the Company intends to start mining, using a contract miner, small scale open pit satellite deposits in order to feed oxidized ore to the plant at a rate of 15,000 tonnes per month at an estimated average gold grade of 3.23grams per tonne and

an anticipated recovery rate of up to eighty percent gold. The plan also calls for more selective mining to increase to 4 grams per tonne the target head grade from the pit.

### ***Bjørnevatn Iron Ore Mine, Norway***

The Bjørnevatn mine in Norway remained on care and maintenance throughout 2001. The company's objective when this asset was acquired was to secure equity financing from a third party for the development of this asset.

To date, the Company has been unsuccessful in securing the additional third party financing necessary to refurbish the mine and recommence operations. In early 2002, the Company tried unsuccessfully to negotiate with the mine's existing Norway lenders for a further deferral of the mine's loan repayment obligations.

The Company intends to exit from the project and return the mine and related assets to the lenders in exchange for cancellation of the existing project debts, all of which are non-recourse to the Company. The Company expects to conclude these negotiations in the second quarter of 2002.

The Company spent a total of \$1.1 million in care and maintenance costs on the property during 2001.

### ***Exploration***

The Exploration Division operating expenses increased from \$7.2 million in 2000 to \$7.3 million in 2001. Most of the 2001 exploration expenses were concentrated on the Mongolia properties. In 2001, the Company completed the initial \$3 million exploration phase on its Oyu Tolgoi property. At the end of January 2002, the Company exercised an earn-in right to acquire a 100% interest in the Oyu Tolgoi property from BHP Minerals International Exploration Inc. ("BHP") by committing to make a \$5 million property payment to BHP and to complete a \$3 million second phase of exploration expenditures. In April 2002, the Company gave notice to BHP that it had completed the \$3 million expenditure requirement for the second phase exploration program.

During the second half of 2001 and through early 2002, the Company increased its Mongolian mineral property holdings to approximately 50,000 square kilometres. The Company plans to spend between \$11 million to \$15 million in exploration activities during 2002 on its Oyu Tolgoi property and on various reconnaissance work on the balance of its Mongolian property holdings. During the second half of 2001 and through the 2002 year to date, the Company raised a total of \$72.7 million primarily to finance its planned Mongolian exploration activities over the next few years.

During 2001 and 2000, exploration expenditures were geographically allocated as follows:

	2001	2000
Indonesia & Thailand	9%	42%
Korea	23%	37%
Myanmar	16%	7%
Mongolia	52%	14%
	100%	100%

## **General**

Interest expense increased from \$4.5 million in 2000 to \$9.9 million in 2001, most of which is attributable to the additional debt acquired as part of the Company's acquisition of ABM at the end of 2000.

A weakening of the Australian dollar in 2001 and its impact on the ABM foreign currency commitment accounted for the majority of the \$7.7 million foreign exchange loss. At December 31, 2001 ABM has a \$70.7 million commitment to sell \$5 million each month in exchange for Australian \$7.3 million. This commitment will expire at the end of February 2003.

Except for the U.S. dollar foreign currency commitment mentioned above, the Company had no other currency or commodity hedge positions at the end of 2001.

## **Cash Resources and Liquidity**

At December 31, 2001 consolidated working capital was \$5.7 million including cash of \$25.8 million compared with working capital of \$30.5 million and cash of \$40.4 million at the end of 2000.

The \$24.8 million decrease in working capital is mainly attributable to a \$14.6 million decrease in cash, a \$3.1 million increase in accounts payable, a \$4.7 million increase in the mark to market of the U.S.\$ hedge commitment, and a \$7.9 million increase in the current portion of the Company's long-term debt, less a \$3.6 million net increase in combined accounts receivable and inventory balances and a \$1.4 million increase in future income tax assets. Included in the current portion of long-term debt is an amount of \$2.9 million obligation of the Company's Norway subsidiary related to the Bjørnevatn iron ore mine. This obligation is non-recourse, and is expected to be eliminated in the second quarter of 2002 from the Company's consolidated accounts, once the property is transferred to its original owner in exchange for the extinguishment of the debt.

The restrictions on the Company's cash balances at December 31, 2001 totaled \$10.5 million, consisting of the Company's share of the S&K Mine's \$14.8 million cash balance (net \$7.4 million), the Savage River cash balance of \$1.1 million, and \$2.0 million restricted by letters of credit issued by the Company to secure obligations with respect to one of its Mongolia properties.

Since the third quarter of 2001, the Savage River operation has been successful in deferring, on a monthly basis, its foreign currency commitments to its lenders. At the end of March 2002, a total of A\$17.8 million in additional funds had been advanced to the Savage River operation by its lenders through deferrals of the foreign currency commitment, resulting in an equivalent increase in the outstanding principal amount of the existing Savage River loan facility. In August 2001, the Company ceased to advance funds to its Savage River operations and ABM commenced negotiations with the existing project lenders with a view to restructuring the project's finances. Pending a satisfactory restructuring of the project's finances, the Company does not intend to advance any further funds to the operation.

During the second half of 2001 through the 2002 year to date, the Company has raised a total of \$72.7 million through the sale of a total of 44.6 million common shares and equity securities exchangeable for common shares of the Company. The proceeds will be used for working capital and to fund the Mongolia exploration and property acquisition activities over the next few years.

Total expenditures in 2002, including all exploration, mine care and maintenance costs and corporate administrative costs, are estimated to range between \$22 million to \$30 million.

## Outlook

For fiscal 2002, annual copper production at the S&K Mine is expected to increase to 29,500 tonnes while annual pellet and iron concentrate production at the Savage River Mine is expected to remain at approximately 2.0 million tonnes.

Apart from variations in production volumes, the Company's earnings and cash flows are directly affected by metal prices, variations in the exchange rate between the U.S. dollar and the Australian dollar and variations in interest rates. The sensitivity of the Company's earnings to metal prices, exchange rates and interest rates is summarized in the table below.

### Earnings Sensitivity (Based on 2002 plan)

Change		Impact on Before-Tax Earnings
		(\$ in thousands)
Copper	US¢1/lb	\$300
Iron Pellet	US\$1/tonne	\$1,600
US\$/AUD\$	AUD \$0.01	\$1,150
US prime	1%	\$650

Various risks, including fluctuations in commodity prices, foreign exchange, customer demand, financing and political uncertainties, can adversely affect the Company's future profitability and its ability to realize anticipated increases in production capacity.

At December 31, 2001 the Company's had no copper hedging contracts outstanding. ABM has an obligation expiring in February 2003, nominally totalling \$70.7 million, to sell \$5 million per month of U.S. currency at \$0.6817 per Australian dollar. At April 30, 2002 the Australian exchange rate was \$ 0.5382 Australian dollar to 1 U.S.\$ dollar.

Unlike copper, iron ore is not a fungible commodity and it is therefore more affected by direct customer and producer relationships. With only a few customers, the Savage River Mine's operations could be adversely affected, in the short and medium term, by the loss of a key customer. A limited customer base is also a risk to the S&K Mine as a substantial part of its copper production is sold, under a take or pay contract, to a single Japanese buyer. The buyer resells the cathode to customers through out Asia. The S&K Mine's profitability could be negatively affected if economic sanctions or boycotts against trade with Myanmar were enacted in the future by major Asian countries.

The Company's existing cash resources are sufficient to meet all of its planned capital expenditures during 2002. However, over the long term, the Company still needs to obtain additional funding for, or third party participation in, its undeveloped or partially developed projects in order to bring them into full production. Such projects include the Letpadaung Copper project, the Mongolia properties and the Bakyrchik Gold Mine. Since factors beyond the Company's control may adversely affect its access to funding or its ability to recruit third party participants, there can be no assurance the Company's undeveloped or partially developed projects can be fully developed in whole or in part.

Since the majority of the Company's indebtedness is not at fixed interest rates, future fluctuations in interest rates will have a significant impact on the profitability of both the S&K Mine and the Savage River Mine as well as the Company's ability to successfully finance its other undeveloped or partially developed projects.

#### Quarterly Data

(\$ in millions except per share information)

	2001				2000			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Revenue	19.5	15.9	21.9	18.0	5.7	5.3	6.2	5.3
Operating Profit	1.0	2.3	1.1	5.6	2.2	2.3	2.9	2.6
Net Loss (1)	68.8	5.1	2.1	9.0	9.3	6.5	0.7	1.4
Cash provided (used) by operations	(3.8)	(7.2)	4.5	(6.7)	(1.1)	(1.9)	(0.6)	0.1
Loss per share (1)	\$0.52	\$0.05	\$0.01	\$0.08	\$0.12	\$0.09	\$0.01	\$0.02

(1) After giving retroactive effect to an accounting change with respect to foreign currency translation made in the fourth quarter of 2001.

**Comparative Figures**

(\$ in million except per share information)

	Years ended December 31							
	2001	2000	1999	1998	1997	1996	1995	1994
Balance sheet								
Cash	25.8	40.4	50.8	55.2	44.5	125.9	22.2	10.9
Working capital	5.7	30.5	49.1	30.0	34.0	130.7	17.1	10.1
Total assets	247.6	316.4	206.2	238.5	268.6	282.1	57.0	23.2
Long term debt, less current portion	46.5	75.7	37.5	40.0	-	-	-	-
Shareholders' equity	130.2	177.9	154.3	160.4	223.3	277.6	50.4	22.1
Earnings and cash flow								
Revenue	75.3	22.5	20.6	-	-	-	-	-
Operating profit	10.0	10.0	7.2	-	-	-	-	-
Exploration	7.2	5.3	6.0	9.7	12.4	9.0	15.8	0.9
Depreciation and amortization	12.7	4.5	3.9	0.3	0.6	0.6	0.1	-
Interest expense	9.9	4.5	4.2	-	0.2	0.3	0.1	-
General and administrative	6.2	5.9	6.6	7.0	12.3	11.2	5.6	2.8
Mining property shut-down costs	3.7	2.5	3.2	13.5	-	-	-	-
Asset write downs	59.2	11.0	0.5	43.4	90.3	-	-	-
Net loss	85.0	17.9	7.6	63.1	116.9	17.3	20.8	3.3
Cash provided (used) by								
operations	(13.2)	(3.5)	(5.8)	(21.2)	(44.6)	(17.2)	(20.8)	(3.3)
Investment, including acquisition of subsidiary net	(0.4)	(1.8)	0.6	6.4	73.0	72.2	17.8	11.4
Investment in capital assets	11.5	2.7	3.7	27.5	38.9	42.1	3.5	0.3
Per share								
Net loss	\$0.66	\$0.24	\$0.10	\$0.88	\$1.68	\$0.32	\$0.58	\$0.32

**ITEM 7: MARKET FOR SECURITIES**

The common shares of the Corporation are traded in Canada on the TSX and in Australia on the Australian Stock Exchange (“ASX”). Based on a change to the ASX listing maintenance requirements for foreign companies, the Corporation plans to de-list its common shares from the ASX later this year. The closing price of the Corporation’s common shares on the TSX on May 15, 2002 was Cdn.\$3.40.

The following sets forth the high and low market prices and the volume of the common shares traded on the TSX during the periods indicated:

(stated in Canadian dollars)

<b>PERIOD</b>	<b>HIGH</b>	<b>LOW</b>	<b>VOLUME</b>
Quarter ended March 31, 1999	\$0.90	\$0.67	2,059,680
Quarter ended March 31, 2000	\$1.10	\$0.83	5,496,873
Quarter ended June 30, 2000	\$1.05	\$0.83	2,801,838
Quarter ended September 30, 2000	\$1.34	\$0.80	3,215,856
Quarter ended December 31, 2000	\$1.34	\$0.60	14,519,282
Quarter ended March 31, 2001	\$2.25	\$0.95	13,228,956
Quarter ended June 30, 2001	\$2.10	\$1.26	4,719,183
Quarter ended September 31, 2001	\$3.04	\$1.28	6,833,345
Quarter ended December 31, 2001	\$2.60	\$1.58	12,983,791
Quarter ended March 31, 2002	\$3.65	\$2.03	26,090,076
Month ended April 30, 2002	\$3.50	\$2.85	9,410,505
May 1 to May 15, 2002	\$3.62	\$3.35	2,968,300

## **ITEM 8: DIRECTORS AND OFFICERS**

The name, municipality of residence and position with the Corporation of each director and officer of the Corporation, and the principal business or occupation in which each director or officer has been engaged during the immediately preceding five years is as follows:

<b><u>Name and Municipality of Residence</u></b>	<b><u>Position with Corporation</u></b>	<b><u>Principal Occupation During Past Five Years</u></b>
ROBERT M. FRIEDLAND Hong Kong	Chairman and Director (Director since March 1994)	Chairman and President, Ivanhoe Capital Corporation (venture capital firm).
R. EDWARD FLOOD Reno, Nevada	Deputy Chairman and Director (Director since March 1994)	Deputy Chairman of the Corporation (May 1999 to present); Senior Mining Analyst, Haywood Securities Inc. (May 1999 to November 2001); President of the Corporation (August 1995 to May, 1999).

<b>Name and Municipality of Residence</b>	<b>Position with Corporation</b>	<b>Principal Occupation During Past Five Years</b>
GORDON L. TOLL Singapore	Deputy Chairman and Director (Director since March 1996)	Senior Vice-President, Ivanhoe Capital Corporation (December 1995 to present); Executive Vice-President and Chief Operating Officer of the Corporation (December 1995 to October 1998).
DANIEL KUNZ Boise, Idaho	President and Director (Director since January 2001)	President of the Corporation (June 2000 to present); Chief Operating Officer of the Corporation (November 1998 to June 2000); Executive Vice-President of the Corporation (October 1997 to June 2000); President and Chief Executive Officer of Sonoma Resource Corporation (November 1995 to October 1997).
ROBERT HANSON London, England	Director (Director since February 2001)	Chairman, Hanson Capital (1998 to present); Chairman, Hanson Transport Group (1996 to 1998); Chairman, Hanson Pacific Limited (1994 to 1996).
KJELD THYGESEN London, England	Director (Director since February 2001)	Managing Director, Lion Resources Management.
ERIC V. FRIEDLAND Vancouver, British Columbia	Director (Director since March 1994)	Independent businessman (July 1997 to present); Director, DiamondWorks Ltd. (December 1993 to May 1999).
JOHN WEATHERALL Toronto, Ontario	Director (Director since June 1996)	President of Scarthingmoor Asset Management Inc.
MARKUS FABER Hong Kong	Director (Director since February 2002)	Managing Director, Marc Faber Limited
PIERRE MASSE West Vancouver, BC	Chief Financial Officer	Chief Financial Officer of the Corporation (November 2001 to present); Controller of the Corporation (October 1998 to November 2001); Chief Financial Officer, Canarc Resources Ltd. January 1997 to September 1998
DOUGLAS KIRWIN Townsville, Australia	Executive Vice-President, Exploration	Senior Vice-President, Exploration of the Corporation (September 1995 to present).

<b>Name and Municipality of Residence</b>	<b>Position with Corporation</b>	<b>Principal Occupation During Past Five Years</b>
EDWARD C. ROCHETTE Jakarta, Indonesia	Executive Vice-President, Legal & Administration	Executive Vice-President, Legal & Administration of the Corporation (September 1995 to present).
BEVERLY A. BARTLETT New Westminster, British Columbia	Corporate Secretary	Corporate Secretary of the Corporation and Corporate Secretary, Ivanhoe Energy Inc. (June 2001 to present); Compliance Manager, Global Mining Management Corporation (April 1997 to present); Assistant Secretary, Ivanhoe Energy Inc. (1999 – 2001); Assistant Secretary, Diamondworks Ltd. (January 1999 to December 1999), Corporate Secretary, Credit Union Central of Canada (August 1993 to March 1997)

### **Shareholdings of Directors and Senior Officers**

As at May 3, 2002, the directors and senior officers, as a group, beneficially owned, directly or indirectly, or exercised control or direction over, 101,397,642 common shares of the Corporation representing 50.92% of the outstanding common shares of the Corporation.

### **Committees of the Board**

The Corporation has an Audit Committee and a Compensation Committee. During the most recently completed fiscal year, the members of the Audit Committee were R. Edward Flood, Kjeld Thygesen and John Weatherall and the members of the Compensation Committee were Robert Friedland, R. Edward Flood and Gordon Toll. The Corporation does not have an Executive Committee.

### **ITEM 9: ADDITIONAL INFORMATION**

The Corporation will provide, upon request to its Secretary, at 654 – 999 Canada Place, Vancouver, British Columbia, V6C 3E1:

- (a) when its securities are in the course of a distribution pursuant to a short form prospectus or when a preliminary short form prospectus has been filed in respect of a distribution of its securities:
  - (i) one copy of this Annual Information Form;
  - (ii) one copy of its comparative consolidated financial statements for the year ended December 31, 2001, and auditors' report thereon;
  - (iii) one copy of its most recent interim consolidated financial statements issued subsequent to December 31, 2001;
  - (iv) one copy of its management information circular dated May 10, 2002 in respect of its 2002 annual meeting of shareholders on June 25, 2002; and

- (v) one copy of any other documents that are incorporated by reference into the aforementioned short form or preliminary short form prospectus;

(b) at any other time, one copy of the documents referred to in (a)(i), (ii), (iii) and (iv) above provided that the Corporation may require the payment of a reasonable charge if the request is made by a person or company who is not a securityholder of the Corporation.

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Corporation's securities, options to purchase the Corporation's Common Shares and interests of insiders in material transactions is contained in the management information circular for the annual general meeting of the Corporation to be held on June 25, 2002. Additional financial information is contained in the Corporation's comparative financial statements for year ended December 31, 2001. Copies of the information circular and financial statements may be obtained upon request from the Corporation at 654 – 999 Canada Place, Vancouver, British Columbia, V6C 3E1.