

IVANHOE MINES LTD

Form 6-K

April 29, 2004

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**SECURITIES AND EXCHANGE COMMISSION**  
Washington, DC 20549

**Form 6-K**

**REPORT OF FOREIGN PRIVATE ISSUER  
PURSUANT TO RULE 13a-16 OR 15d-16 OF  
THE SECURITIES EXCHANGE ACT OF 1934**

From: April 28, 2004

**Ivanhoe Mines Ltd.**

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*(Translation of Registrant's Name into English)*

**Suite 654 999 Canada Place, Vancouver, British Columbia V6C 3E1**

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*(Address of Principal Executive Offices)*

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

Form 20-F-

Form 40-F-

(Indicate by check mark whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.)

Yes:

No:

(If  Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82-\_\_\_\_\_ .)

Enclosed:

Australian Technical Report

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**IVANHOE MINES LTD.**

**Date:** April 28, 2004

By: */s/ Beverly A. Bartlett*

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BEVERLY A. BARTLETT  
Corporate Secretary

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# Ivanhoe Mines Ltd.

## Quarterly Technical Report

For the three months ending March 31, 2004

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*For further information, please contact:*

*Bill Trenaman  
Investor Relations  
Ivanhoe Mines Ltd.  
654 999 Canada Place  
Vancouver, British Columbia  
Canada V6C 3E1*

*Telephone: 604-688-5755  
Toll free: 888-273-9999  
Facsimile: 604-688-7168  
E-mail: bill@ivancorp.com*

*This information is available on our website at [www.ivanhoe-mines.com](http://www.ivanhoe-mines.com)*

## **Key Points:**

CIBC World Markets and Citigroup Global Markets have been retained by Ivanhoe to evaluate strategic alternatives for the company's Oyu Tolgoi (Turquoise Hill) copper/gold project in Mongolia. Ivanhoe has been approached by several international mining companies with respect to a possible transaction relating to the Oyu Tolgoi project. The investment banks will help to evaluate the various options available to the company.

An updated, independent resource estimate of the Oyu Tolgoi project is being prepared by AMEC of Canada and is expected to be issued in May. The new resource estimate will be incorporated into a Revised Independent Scoping Study that is expected to be issued in June.

An expansion at the Monywa copper joint venture to 39,000 tonnes per annum (tpa) has been approved by the Myanmar Government and completion is expected by September, 2004. The expansion is planned to increase production by 9,000 tpa and will cost approximately US\$3.7 million.

Iron price negotiations were finalised earlier than in previous years and resulted in a 19% increase in pellet price for the ABM Mine, effective April 1st.

## **Overview**

### *Production*

Copper cathode production from the Monywa Mine was 7,673 tonnes for the quarter. Ivanhoe's 50% share of sales revenue was US\$9.57 million. Minegate cash costs were US\$0.36 cents during the quarter.

Iron pellet production from ABM's Savage River Mine was 552,727 tonnes for the quarter. Pellet sales were 572,933 tonnes. Sales revenue was A\$24.3 million.

Bakyrchik did not produce any doré gold in the quarter.

## **Development**

In February, 2004, AMEC Ausenco Joint Venture issued a Preliminary Assessment Technical Report detailing the results of the scoping study conducted during 2003. The study examined three production cases with throughput rates of up to 40 million tonnes per year.

## **Exploration**

Resource delineation drilling continues with 18 drill rigs at Turquoise Hill. Exploration drilling has commenced at the Chandman Uul iron-copper-gold project, 400 km south east of Ulaanbaatar. Drilling commenced at the Monywa copper mine with the aim of expanding ore reserves near the Sabetaung and Sabetaung South pits.

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**COPPER PRODUCTION SUMMARY**

<b>Mar. 2004 Quarter</b>	<b>Tonnes of Ore to Heap (000's)</b>	<b>Head Grade (Cu CN %)</b>	<b>Cathode Production (tonnes)</b>	<b>Price of Copper (US\$ per Lb.)</b>	<b>Minegate unit cost of Copper produced (US\$ per Lb.)</b>
<b>Monywa, S&amp;K, Myanmar</b>	1,409	0.79%	7,673	\$ 1.19	\$ 0.36

**IRON PRODUCTION SUMMARY:**

<b>Savage River, Australia</b>	<b>Tonnes Milled Wet</b>	<b>Concentrate Production</b>	<b>Grade (DTR)</b>	<b>Pellet Production (tonnes)</b>	<b>Pellet Sales (tonnes)</b>
<b>Q1 2004</b>	1,272,297	523,652	43.3	552,727	572,933
<b>Q1 2003</b>	1,395,120	607,716	45.9	578,679	571,404

<b>Savage River, Australia</b>	<b>Total Iron Ore Product Sales Results</b>	<b>Tonnes Sold</b>	<b>Sales Revenue (A\$ million)</b>	<b>Total Operating Costs (A\$ million)</b>	<b>Capitalized pre-stripping costs (A\$ million)</b>
<b>Q1 2004</b>		585,339	24.3	29.0	3.6
<b>Q1 2003</b>		584,988	27.4	29.8	4.1

**PRODUCTION****Overview****Monywa Copper Joint Venture, Myanmar**

The S&K Mine produced 7,673 tonnes of LME grade A cathode copper during the quarter. This is an average of 2,557 tonnes per month or 84.3 tonnes per day.

Higher ore grade, at an average of 0.79% copper over the quarter, continued to underpin strong heap leach performance, increased copper cathode production and lowered operating costs.

Heap leach recovery continues to improve with the use of advanced heap leaching practices and with the completion of Pad 3 in March, 2004, a sufficient heap leach pad area is now on hand to comfortably sustain current production levels.

Improved power supply assisted in March to establish a record of 2,701 tonnes for the month. High solution grades reduced reagent and power costs. Lower waste mining and improving grades also reduced the cost of mining. Minegate cash costs were \$0.36 cents during the quarter.

An expansion to 39,000 tpa has now been approved by the Myanmar Government and completion is expected by September, 2004. The expansion is expected to cost approximately \$3.7 million and will be funded by internal cash flow.

These represent the first phases of the Sabetaung, Kyisintaung and Letpadaung (SKL) staged construction program, which is planned to take production ultimately to 125,000 tpa within five years.

A drilling program was commenced during the quarter, with the aim of proving up new ore from targets to the North and North East of Sabetaung and at depth in both the Sabetaung and Sabetaung South pits.



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Improving metal prices assisted with the average price received during the quarter increasing to \$1.19/lb.

### **S&K Copper Mine**

**Qtr End March 2004**

	<b>Actual</b>
Tonnes ore to heap (000 s)	1,409
Total tonnes mined (000 s)	2,549
Grade (Cu CN %)	0.79%
Strip Ratio	0.81
Tonnes Sold	7,304
Cathode Production (tonnes)	7,673
Revenue (\$000 s)	19,141
Price of Copper (US\$ per Lb.)	1.19

### **Savage River, Tasmania**

During the first quarter of the year, the US/Australian exchange rate peaked at \$0.80 cents in February and has since been trading at between \$0.72 and \$0.78 cents.

Iron price negotiations were finalised earlier than in previous years and resulted in a 19% increase in pellet price, effective April 1st. The large price increase was driven by a continuing strong demand for iron ore products from Chinese steel mills.

Concentrate and pellet production was slightly less than the same quarter last year, mainly due to lower ore grades, but inline with the Mine Plan which forecast lower grades and tight ore supply due to the exhaustion of South Deposit. North Pit and Center Pit South commenced ore production during the quarter and by the time South Deposit is exhausted in the second quarter, these new pits will be in full production.

Sales revenue was reduced by 11% over the same quarter last year due entirely to the strengthening of the Australian dollar against the US dollar, but somewhat offset by the 2003-2004 pellet price increase of 9.8%.

Work continued on the pre-feasibility study of an underground block-cave operation in the North Pit.

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

During the first quarter of 2004, Bakyrchik did not produce any doré gold. However, during this period, the existing flotation plant continued to process sulphide ores which had been previously mined. Throughout this quarter, 811.3 tons of sulphide concentrates averaging 32 grams of gold per ton were produced. Furthermore, 13.8 tons of gravity concentrates analysing 166.4 grams per ton of gold were produced when commissioning the newly installed shaking tables. The purpose of operating the plant is to produce batches of concentrate for commercial testing and also for sale. During the second quarter, the plans are to start to process tailings through the gravity section of the existing flotation plant.

During this period, operation of a pilot-sized rotary roaster continued. The test results continue to confirm that this technology can be applied to roast whole ores, concentrates and technogenics (man-made materials). Preliminary results obtained during the first quarter of this year, after acid washing of the calcines, resulted in recoveries exceeding 90%. Based on the pilot plant roasting results today, the company FFE Minerals of Allentown, PA was retained to conduct roasting tests on



Bakyrchik whole ore using one of their prototype direct fired pilot rotary kilns. The results obtained have confirmed that the levels of arsenic and sulphur can be reduced to equal or improved levels than those obtained in CFB. However, CIL tests are still being conducted by Hazen Research of Golden, CO. The calcines produced by the FFE Minerals pilot rotary kiln are being cyanide leached to determine the ultimate gold recovery that can be obtained with this roasting technology.

Work continues to implement the work program approved by the Government of Kazakhstan to resume mining operations at Bakyrchik. For this purpose, the services of Aker Kvaerner and local institutes have been engaged. Contracts to certify the mining plan and methods, design of the process facilities and infrastructure have been signed. The local research institutes VNIItsvetmet and Kazgiprotsvetmet continue to work on the mining plan and the process plant design. The company GEOS has completed the estimation of reserves by levels as required by the mining regulations.

In the exploration area, we are planning to request an eight year extension from the Ministry of Energy and Mineral Resources to evaluate all commercial discoveries.

The company Roscoe Postle was retained to complete the 43-101 report as a listing requirement by the Toronto Stock Exchange. Also during this period and for the same purpose, the company Deloitte and Touche conducted a financial audit of Bakyrchik Mining Venture.

Aker Kvaerner completed the 1.4 million tpa scoping study using one stage CFB roasting technology. During the second period of 2004, they will complete the 700,000 tpa and 1.4 million tpa two stage CFB roasting cases. Minproc is currently completing a study to relocate a large roasting plant to Kazakhstan.

We expect that the sales of concentrates to the Russian Roasting Plant Company located in the Urals will start next quarter. This company is one of the few that has expressed interest in buying high arsenic concentrates.

First quarter expenditures totalled approximately US\$990,000.

## **DEVELOPMENT**

### **Modi Taung Gold Project Block 10, Myanmar**

Adit advances from January to March totalled 781 metres, with seven active faces in three levels on the Htongyi Taung veins, two active faces on Shwesin and two on the Adder vein.

At Htongyi Taung the best results were on the 975 level where the SE drive continued in vein and a second SE drive began from a cross-cut through an eastern vein. On the 950 level the generally high-grade main vein is now offset by a shear and is targeted in cross-cuts. The high-grade Grass vein in trench and drill core is 30 metres to the SE of the end March drive face. On the 1025 level drive, the vein was lost in late January but eastern veins persist in cross-cuts.

At Shwesin, the 1000 level remained in a shear with vein fragments largely within sandstone. The 1200 level drive continued in vein for 60 metres with highly variable gold values until cut by a sub-parallel shear. In the Adder vein, 800 metres NW of Htongyi Taung, short high-grade vein segments are offset by faults.

Underground drilling continued with 920 metres completed in 40 metre horizontal holes from chambers near the drives, reducing the need for cross-cuts. A surface diamond core drilling program of 13 inclined holes totalling 2900 metres began in March, mostly targeted on the Htongyi Taung veins above 800 metres and its NW and SE extensions. The second hole 400 metres SE of the Level 950 face encountered six veins with significant apparent widths. Adit, surface drilling and trench results indicate that Htongyi Taung has a probable strike length exceeding 1 km, and a possible further continuation of 800 metres through the Adder vein. Htongyi Taung has two and commonly three veins on each level, and potentially mineable segments comprising 30 to 40 percent of each vein.

Preparation for installation of a battery locomotive, steel rail and mucking machine at Htongyi Taung included excavation of space for track and side-dumping, rail haulage development on the east vein, road access and culverts. On the Modi Taung access road, upgrading continued with waste rock paving and berm construction.

Topographic mapping (two metre contours) over 2.9 km<sup>2</sup> NW and S of the adit area began in mid-January and was completed March 30th. The map will facilitate location of vein outcrops and float and gold anomalies on augur soil samples in recent geochemical surveys.

Reports received in the quarter include recommendations on tailings disposal including use of geotextile tubes, and an environmental impact statement on possible use of cyanide. Results of metallurgical tests on further 50 kg samples are due in early April.

At Kankaung, 12 km NW of Modi Taung, cross-cuts from the adit at a 610 metre elevation intersected numerous veinlets, some with grades over 1000 g/t, but veins of persistent significant width are so far elusive.

The draft joint venture proposal for development of Modi Taung as a 75 tpd operation, submitted to the Mines Ministry in December, was found to be acceptable in principle and with some amendments will be submitted for final approval in April.

First quarter expenditures totalled approximately US\$560,000.

### **Oyu Tolgoi, Mongolia**

#### **Scoping Study**

A preliminary assessment report was issued in February 2004 by AMEC Ausenco Joint Venture detailing the results of the scoping study carried out during 2003. The report was lodged with the Ontario Securities Commission and is available from the SEDAR website ([www.sedar.com](http://www.sedar.com)).

The preliminary assessment report includes inferred resources that have not yet been sufficiently drilled to have economic considerations applied to them to enable them to be categorized as reserves. Until there is additional drilling to upgrade the inferred to measured and indicated resources, there can be no certainty that the preliminary assessment will be realized.

The report examined three alternate development concepts:

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**Base case:** Initial plant constructed to process 17-20 million tonnes per annum (Mtpa) based on fast-track development of open pits at the Southwest Oyu, Central Oyu and Hugo South deposits. This would be followed by an expansion in year five to provide for a production rate of 40 Mtpa through the development of an underground mine at Hugo North.

**Full-scale Case:** Production begins at 40 Mtpa with the processing facility developed in one step.

**Stand-alone Case:** Based on a development of open pits at Southwest Oyu and Central Oyu with a production rate of 17-20 Mtpa. (essentially the first stage of the Base Case.)

The primary statistics relating to the three concepts are summarized below based on metal prices of US\$400/oz gold and US\$0.90/lb copper:

Factor	Units	Base Case	Full-scale Case	Stand-alone Case
<b>Initial capital</b>	<b>US\$ million</b>	529	1,167	510
<b>Pre-tax payback period</b>	<b>Years</b>	6.2	5.6	3.7
<b>Total cash cost first 10 years*</b>	<b>US\$/lb copper</b>	0.39	0.41	0.33
<b>After-tax NPV @ 7.5% (100% equity financing)</b>	<b>US\$ million</b>	1,324	1,293	359
<b>IRR (100% equity financing)</b>	<b>%</b>	21.2	17.5	18.9
<b>IRR (70:30 debt:equity)</b>	<b>%</b>	27.8		

\* Cash costs include all project general and administrative costs (G&A), all mine-site costs (including expensing of the pre-stripping costs of Hugo South Deposit), all treatment and refining charges and penalties, all concentrate transportation costs and all royalty, lease and property imposts.

Ivanhoe is currently reviewing alternate throughput options prior to proceeding with a feasibility study for the project.

### Metallurgical Testwork

The remaining samples from the pre-feasibility testwork undertaken by SGS Lakefield in Canada have been moved to Australia where the bulk of testwork for the feasibility study will be undertaken. Additional samples for this phase of the testwork are being sourced from Oyu Tolgoi.

Testwork in Australia by Ammtec Limited has been aimed at duplicating the results previously achieved by SGS Lakefield.

## **EXPLORATION**

### **Mongolia**

At the end of the first quarter of 2004 Ivanhoe's direct and indirect holdings includes 116 mineral exploration licences covering 10,164,019 hectares (101,640.19 km<sup>2</sup>). Of these, 76 licences totalling 6,730,384 hectares (67,303.84 km<sup>2</sup>) are held by IVN Mongolia, 40 licences totalling 3,954,402 hectares (39,544.02 km<sup>2</sup>) are held by Asia Gold Corp, a company 51.1% owned by Ivanhoe and three licences totalling 25,936 hectares (259.36 km<sup>2</sup>) are held in a joint venture with QGX Gold Ltd. Ivanhoe has an additional six exploration licences totalling 307,625 hectares (3,076.25 km<sup>2</sup>) under application.

In addition to the above licences, eight exploration licences totalling 383,955 hectares (3,839.55 km<sup>2</sup>) are held by Ivanhoe as Oyu Tolgoi coal, water or limestone exploration plays. Ivanhoe also holds four mining licences at Oyu Tolgoi totalling 23,867 hectares (238.67 km<sup>2</sup>).

First quarter expenditures outside the Oyu Tolgoi project totalled approximately US\$0.8 million. Of this, approximately US\$200,000 was spent on licence renewals and US\$200,000 was spent at Chandman Uul. The remainder was spent on general reconnaissance and generation of targets for 2004.

Field work was greatly reduced during the first quarter of 2004 due largely to the severity of the Mongolian winter. Field work was undertaken at Chandman Uul in preparation for March 2004 diamond drilling.

### **Turquoise Hill/Oyu Tolgoi**

Recent drilling at the Oyu Tolgoi project has been focused on upgrading a significant portion of the open-pit resources to the indicated and measured categories. An updated, independent resource estimate of the Oyu Tolgoi project currently is being prepared by AMEC of Canada and is expected to be issued in the second quarter. The new resource estimate will be incorporated into a revised independent scoping study that is expected to be issued in June.

The new scoping study will be prepared in accordance with National Instrument 43-101 Standards of Disclosure for Mineral Projects.

First quarter expenditures for the Oyu Tolgoi project totalled approximately US\$17.4 million

### **Hugo Dummett**

The Hugo Dummett deposit extends over a strike length of approximately 2.6 km and appears to strike northerly into a late high angle reverse, north-easterly trending fault. The southern half of the deposit is dominated by high-sulphidation type related mineralization, hosted by advanced argillic altered dacitic ash flow tuff overlaying intermediate argillic to chlorite altered basaltic volcanics. Sedimentary rocks overlie the dacitic tuffs and cap the high-sulphidation system. Quartz monzodiorite intrusions intrude into the underlying basalts as fingers and dykes irregularly along the strike length.

At the north end of the deposit, an intensely quartz stockworked quartz monzodiorite intrusion in several deep holes proximate to a significant increase in gold content of the bornite-rich mineralization hosted by both the basalt and quartz monzodiorite. Bornite, chalcopyrite mineralization in the northern end and bornite, chalcocite mineralization in the southern half are centred on a zone of intense quartz veining that extends along the axis of the entire deposit. The highest grade mineralization corresponds to zones with greater than 90 percent quartz, which may be over 80 metres thick in drill core. A large part of southern portion of the deposit is hosted by ash flow tuff, while the in the north part of the deposit contains high-grade mineralization that is almost entirely in basalt.

Ivanhoe has divided the Hugo Dummett deposit into a northern portion ( Hugo North ) and a southern portion ( Hugo South ) for the purposes of development and mine planning. Hugo South and Hugo North are separated by a transition zone of narrow mineralization that corresponds to a 110 degree cross fault known as the 110 Fault. Hugo South consists of a lower gold to copper ratio, averaging 10 to 1 copper to gold in most of the zone. It represents the portion of the deposit closest to the surface, with the lowest portion of the deposit approximately 700 metres below surface compared to 1,500 metres below surface for the Hugo North deposit. Alteration of the ignimbrite in Hugo South is dominated by advanced argillic alteration consisting of pyrophyllite, diaspore, zunyite, alunite overprinted by topaz and finally by kaolinite and dickite. Sulphide mineralization is primarily hosted in the advanced argillic altered ignimbrite and is zoned from deep to shallow consisting of chalcopyrite, molybdenite, hematite to bornite+chalcocite, bornite+chalcopyrite to bornite+chalcocite to bornite+chalcocite, bornite+chalcopyrite, enargite, pyrite to bornite+pyrite to pyrite.

Hugo North contains a high-grade copper zone, hosted primarily in basalt and quartz monzodiorite in which mineralization exceeding 2% to highs of 5% copper is present. An important feature of the Hugo North mineralization is a significant increase in the gold to copper ratios. The northern half of Hugo North contains a gold to copper ratio of 0.5 to 1.0 up to a high of 1:1. This gold-rich zone is dominated by bornite, but is mixed with minor chalcocite and chalcopyrite and is associated with intense quartz veining occupying up to 85% of the rock. The high-grade deposit is internal to a significantly larger body of copper mineralization grading between 1% to 2% copper, consisting of a mixture of chalcopyrite and bornite. Alteration in Hugo North consists primarily of quartz, sericite, chlorite and local patches of biotite of the basalt and quartz monzodiorite host rocks. Advanced argillic alteration and associated high sulphidation mineralization including enargite is present only in the hanging wall ignimbrite overlying the bulk of the deposit. Hugo North's current base is approximately 800 metres below the base of Hugo South and 1,500 metres below surface.

The width of the mineralized zone on the Hugo Dummett deposit varies along strike from 200 meters to in excess of 500 metres. Mineralization dips generally to the east from as low as 40 degrees to up to 80 degrees, but is generally above 60 degrees and increases to sub-vertical at the northern end of Hugo North.

Drilling to expand and infill the inferred resources previously reported at the Hugo Dummett deposit in AMEC's November, 2003, estimate is ongoing. An updated, independent resource estimate for the Hugo Dummett deposit is expected to be issued in May.

### **Central Oyu**

The 700 metre by 700 metre deposit has now been drilled to the density required for indicated resources based on guidelines provided by AMEC. All assays have been received and geological solids are being prepared in Surpac for resource estimation purposes.

Additional drilling (4 to 6 holes) will be required on the fringes of the deposit where holes designed to cut off the mineralization showed extensions thereof. These holes will be required primarily on the SE side and are being picked up by the drilling now being carried out in the Bridge Zone between Central and SW Oyu.

### **South West Oyu**

Drilling to define indicated resources from the resources previously designated inferred is now nearing completion. 24,000 metres were initially planned and 19,000 metres have been completed with assays received from 30 holes totalling 15,000 metres. The program has been expanded to a total of 27,500 metres totalling 44 holes based on the preliminary results to date. It is intended that with the completion of Central Oyu resource estimating, AMEC will update the SW Oyu resource.

### **Measured Resources**

Drilling is being moved forward to bring the gold-rich, high-grade core of SW Oyu to a measured resource classification as early as possible. Additional rigs are being sought to complete this work. A total of 58 holes for 33,000 metres are planned subject to review by AMEC. The holes were laid out to bring the hole density to 50 metre centres on the SE-NW drill grid. This program is restricted to only the high grade core, covering a 500 metre strike length and 350 metre width of SW Oyu to a depth of approximately 800 metres tracing the high grade gold, copper mineralization to depth. The objective of taking the holes to this depth is to define both the open pit resources and provide a detailed model for deep block caving of the down plunge extension. This program, assuming up to 10 rigs are utilized, will take approximately two months to drill, could be finished by late May. Detailed Surpac modeling will be ongoing but will only finish after the end of drilling and receipt of assays. Additional time will be required for this work given the level of detail necessary for producing mine scale plans and sections for feasibility work. A final resource estimate is expected in July.

### **South West Oyu Central Bridge Zone''**

The Bridge Zone lying between the Central Oyu and SW Oyu deposits is approximately 700 metres in width (NW-SE) and 400 metres in strike length (NE-SW). Initially a 100 metre spaced drill program consisting of 28 holes totalling 11,500 metres was laid out to cover the sparsely drilled area down to a depth of 300 metres. Limited copper mineralization was expected in the zone, although IP does indicate continuation of the sulphide mineralization between the two deposits. A dyke swarm that interrupts the NE extension of SW Oyu was also considered to be problematic in defining mineable resources in the area, hence the lower priority for drilling. The program currently underway was considered more of a condemnation program between the adjoining open pits planned for SW and Central Oyu. Presently 17 holes have been completed, totalling 7,200 metres, with 3,500 metres left in the program.

Results for this program are very encouraging although dykes are commonly intersected in the holes as predicted. On the east side of the zone a NW-SE fence of five holes, OTD714, 715, 716, 717 and 720 are being drilled on a NW azimuth.

Spaced at 100 metres intervals the holes have intersected a sequence of east dipping sedimentary rocks overlying ignimbrite with chalcopyrite, bornite and minor enargite, chalcocite indicative of Hugo-style mineralization. Underlying the ignimbrite is basalt, with quartz stock work and fine disseminated chalcopyrite and bornite, also similar in style to the footwall basalts in Hugo South. While the copper grades do not appear to be in excess of 1% copper over sustained intervals, they are probably >0.5% to 1% extending up to the base of oxidation in OTD720, the most westerly hole on the fence. Unmineralized dykes do occur in the sections cutting 50 metres to 75 metres out of the mineralized intervals. At 150 metres below surface, the mineralization appears to be approximately 450 metres in horizontal width cut by 180 metre total width of two unmineralized dykes. Based on visual observations in the drill holes, mineralization could extend down to 400 metres below surface in the shape of a mushroom.

Drilling requirements to complete the drill out of the Bridge Zone to approximately 70 metres, centres around the currently recognized mineralization will be 12,700 metres in 19 holes. Currently seven rigs are in this zone drilling. This should provide both inferred and indicated resources for inclusion in the SW Oyu indicated resource update.

#### **South Oyu**

No drilling has been started in South Oyu, however, 22 holes are planned totalling 8,900 metres to bring the inferred resource to an indicated level. This work will not start until the SW Oyu and Bridge Zone drilling is nearing completion.

#### **Chandman Uul**

The Chandman Uul iron-copper-gold project is located 400 km SE of Ulaanbaatar, 130 km NE of the nearest railway station at Sainshand and 90 km NW of the Mongolian-Chinese border. The project comprises a block of seven licences totalling 336,687 hectares (3,366.87 km<sup>2</sup>) and owned 100% by IVN Mongolia.

Chandman Uul comprises three main mineralized centres: Chandman I (iron-copper), Chandman II (copper-gold) and Chandman III (copper-base metal). Chandman I is a magnetite skarn hosted in a metamorphosed sequence of andesite and dacite tuffs. Mineralization at Chandman II consists of quartz ± pyrite-bornite-arsenopyrite veins and copper oxides hosted in a Devonian granite. Chandman III is a skarn-related copper and base metal (Zn-Pb) deposit hosted in intercalated meta-andesite tuffs and meta-limestones.

The Chandman I prospect comprises a 2.7 km long magnetite-rich skarn which is up to 100 metres wide in outcrop. Russian-Mongolian drill logs and cross sections suggest that the skarn forms discrete layers and lenses that are up to 80 metres thick and dip at approximately 45° to the SE. Magnetite-rich zones are hosted within chlorite schists, andesite tuffs and dacite tuffs which are locally skarnoid. Skarn formation is most likely associated with emplacement of leucocratic granodiorites to granites. Major SE and NW trending fault sets truncate the magnetite units at depths of up to 200 metres. Several other gold, copper and iron mineral occurrences are located up to 30 km SW along strike of the fault zone.

IVN Mongolia visited Chandman Uul in 2001 as part of a regional helicopter-based reconnaissance program and recommended acquisition of the property. Detailed geological mapping was completed in 2002 and involved collection of 1,365 surface rock chip samples over an area of approximately 70 km<sup>2</sup>. Almost 2,400 contiguous

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line kilometres of ground magnetic data and 56 contiguous line kilometres of gradient array IP data were also acquired.

Exploration in 2003 concentrated on Chandman I. 600 surface rock chip samples were collected on a 25 by 50 metre grid over the magnetite skarns to objectively assess their prospectivity for an iron resource and to provide a thematic map of iron grades to assist with drill planning. XRF results of all rock chip grid samples indicate that the magnetite skarn contains between 40 and 68% iron (average of 51% iron). Petrology, quantitative Rietveldt XRD and mineral liberation analysis of select high grade samples indicate iron oxide minerals comprise between 65 and 98% of the magnetite skarns and that the principal metal associated minerals are magnetite, hematite, maghemite, malachite, and minor pyrite and chalcopyrite. Magnetite is the dominant primary iron mineral and variable proportions of the iron oxides largely reflect surface oxidation processes. Gangue minerals have low abundances and include quartz, amphibole, garnet, mica, smectite and ankerite.

Fire assay results indicate weakly anomalous gold (average 0.16 ppm) across the skarn. The highest gold value (22.60 g/t) was from a magnetic skarn sample with quartz-carbonate-magnetite stringers. Fifteen other skarn samples with variable magnetite and quartz stringers assayed from 1 to 3.90 g/t gold. Eighteen samples of malachite stained rocks in the northern oxidized magnetite skarn assayed between 0.50 to 5.22% copper.

XRF and ICP-MS results of 376 of the more iron-rich grid samples indicate the magnetite skarn contains low impurities, including: P2O5 (average 0.04 wt %), SO3 (average 0.04 wt %), TiO2 (average 0.09 wt %), MgO (average 0.68 wt %); Ni (average 30 ppm) and V (average 111 ppm).

Diamond drilling has commenced at Chandman I and will initially comprise six parallel fences of vertical holes for a total 5,000 metres. Each fence will consist of three to four holes which will be drilled off 120 metre centres to depths of between 200 and 300 metres. A second drilling phase of approximately 19,500 metres is recommended as an infill program of the magnetite skarn if initial drilling results are encouraging. The objective of the drilling is to define a resource of at least 50 million tonnes at >50% iron. Several ground magnetic anomalies along strike of Chandman I indicate excellent potential for discovery of other skarns.

### **China**

Ivanhoe is exploring for gold, copper and platinum-group metals (PGMs) on numerous projects throughout China, through a joint venture with Jinshan Gold Mines Inc. ( JIN ). Two of JIN 's most advanced projects, the JBS Platinum and Palladium Project and the 217 Gold Project, are at the scoping study stage of development. On October 24, 2003, JIN and Ivanhoe reached an agreement-in-principle to restructure their mineral exploration and development joint venture. The revised agreement will reduce Ivanhoe 's maximum earn-in from 80 to 50% on JIN 's most significant projects in China. Ivanhoe retains the right to earn up to 80% of the available interest in any new projects acquired by JIN in China (excluding Anhui and Liaoning provinces). The revised agreement also contains a mutual non-compete clause, whereby JIN agrees not to compete for any new mineral properties in the Inner Mongolia Region and Ivanhoe agrees not to compete for any new mineral properties in Liaoning Province.

Ivanhoe has agreed to transfer to JIN 50% of its interest in the Shuteen exploration



licence in southern Mongolia. The project has similar geological characteristics and is within the same copper-rich mineral belt that hosts Ivanhoe's Turquoise Hill and Kharmagtai porphyry copper-gold projects. The Shuteen licence covers approximately 93 square kilometres (36 sq. miles), approximately 100 km east of Kharmagtai. Ivanhoe acquired the right to earn an 80% interest in Shuteen in early 2002 by undertaking to complete a US\$1.5 million exploration program before December 31, 2004. To date, Ivanhoe has spent approximately US\$1.4 million on the project.

Ivanhoe is evaluating numerous gold and copper targets in Inner Mongolia and an exploration office has been established in the provincial capital at Hohhot. Ivanhoe is exploring in a joint venture with Inner Mongolia Huayu Geology and Minerals Exploration Co. Ltd., an affiliate of China Non-Ferrous Metals Industries Corporation of Beijing.

#### **South Korea**

*On April 6, 2004, Asia Gold Corp. ( AGC ) agreed to sell its 90% interest in Korea Exploration and Mining ( KEM ) to Hangum Co. Ltd., a South Korean company that currently owns a 10% interest in KEM. In consideration for the sale of its interest in KEM, AGC will receive US\$422,000 in cash plus all proceeds from the eventual sale of concentrate produced at the Eunsan trial mine up to March 31, 2004. The transaction is scheduled to close in June, 2004. AGC does not plan to continue exploration or mining activity in South Korea after the closing of the transaction with Hangum.*

#### **Vietnam**

Ivanhoe holds a minority interest in a gold exploration joint venture in Vietnam with Olympus Pacific Minerals, a public Canadian mineral exploration company, and Zedex Ltd., a New Zealand registered investment company. The joint venture's principal project is the Phuoc Son gold project, in northwestern Quang Nam Province, Central Vietnam.