



## **Annual Information Form**

**For the year ended December 31, 2013**

March 28, 2014

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## FORWARD LOOKING STATEMENTS

Certain statements in this annual information form (“**AIF**”) constitute “forward-looking statements” or “forward-looking information” within the meaning of applicable securities laws. Such statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Ivanhoe Mines Ltd. (“**Ivanhoe**” or the “**Company**”), or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or information. Such statements can be identified by the use of words such as “may”, “would”, “could”, “will”, “intend”, “expect”, “believe”, “plan”, “anticipate”, “estimate”, “scheduled”, “forecast”, “predict” and other similar terminology, or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved. These statements reflect the Company’s current expectations regarding future events, performance and results and speak only as of the date of this AIF.

Specific statements in this AIF that constitute forward-looking statements or information include, but are not limited to: (i) the estimated net present value, internal rate of return and expected steady-state production of the Kamoa Project reported in the Kamoa Technical Report; (ii) early cash flows from the sale of high-grade copper concentrate; (iii) estimates of cash costs (including life-of-mine average cash costs of \$1.19 per pound of copper after credits) for the Kamoa Project; (iv) the timing of the excavation of the first mine-access decline at Kansoko Sud; (v) the planned smelter and acid plant at the Kamoa Project; (vi) the planned supply of electrical power at the Kamoa Project; (vii) the estimated net present value, internal rate of rate and expected steady-state production of the Platreef Project reported in the Platreef Technical Report (including the 4 Mpta, 8 Mpta and 12 Mpta production scenarios as well as the base case estimate of 785,000 ounces of future platinum, palladium, rhodium and gold (3PE+Au) production); (viii) estimates of cash cost (including the base case estimate of US\$341 per ounce of 3PE+Au) for the Platreef Project; (ix) the Company’s application for a mining right under the MPRDA for its Platreef Project; (x) the completion of the sinking of Shaft #1 at the Platreef Project; (xi) the start of Shaft #2 design and engineering and development works at the Platreef Project; (xii) the completion of the pre-feasibility study and integrated development plan for the Platreef Project; (xiii) the availability and development of water and electricity projects for the Platreef Project (including the new De Hoop Dam) and the addition of the first unit of the new Medupi Power Station; (xiv) the creation of a Broad-Based Black Economic Empowerment structure for the Platreef Project; (xv) efforts to upgrade historical resource estimates at the Kipushi Project; (xvi) the commencement of development and/or mining operations at any Project; (xvii) metallurgical testwork, concentrator design, proposed mining plans and methods, mine production rates, mine life, metal recoveries and future estimated cash flow at the Kamoa and Platreef Projects; (xviii) future commodity price assumptions; (xix) estimates of capital costs for the Projects; (xx) the degree of success of any future exploration program, including the potential addition of Mineral Resources; (xxi) the prospective receipt of permits, licences or approvals at any Project, including those necessary to commence development or mining operations; (xxii) expected activities or results at any Project; and (xxiii) compliance with applicable laws, rules and regulations.

With respect to forward-looking statements or information contained in this AIF, in making such statements or providing such information, the Company has made assumptions regarding, among other things: (i) the accuracy of the estimation of Mineral Resources; (ii) that exploration activities and studies will provide results that support anticipated development and extraction activities; (iii) that studies of estimated mine life and production rates at the Projects will provide results that support anticipated development and extraction activities; (iv) that the Company will be able to obtain additional financing on satisfactory terms; (v) that infrastructure anticipated to be developed or operated by third parties, including electrical generation and transmission capacity, will be developed and/or operated as currently anticipated; (vi) that laws, rules and regulations are fairly and impartially observed and enforced; (vii) that the market prices for relevant commodities remain at levels that justify development and/or operation

of a Project; (viii) that the Company is successful in applying for a mining right under the MPRDA for its Platreef Project; (ix) that the Company will be able to successfully negotiate land access with holders of surface rights; (x) that the Company will be able to obtain, maintain, renew or extend required permits; and (xi) that war, civil strife and/or insurrection do not impact the Company's exploration activities or development plans. All other assumptions used in this AIF constitute forward-looking information.

With respect to specific forward looking information concerning the development of the Kamao and Platreef Projects, the Company has based its assumptions and analyses on certain factors which are inherently uncertain. Uncertainties include among others: (i) the adequacy of infrastructure; (ii) geological characteristics; (iii) metallurgical characteristics of the mineralization; (iv) the ability to develop adequate processing capacity; (v) the price of copper, nickel, platinum, palladium, rhodium and gold; (vi) the availability of equipment and facilities necessary to complete development, (vii) the cost of consumables and mining and processing equipment; (viii) unforeseen technological and engineering problems; (ix) accidents or acts of sabotage or terrorism; (x) currency fluctuations; (xi) changes in regulations; (xii) the availability and productivity of skilled labour; (xiii) the regulation of the mining industry by various governmental agencies; and (xiv) political factors.

This AIF also contains references to estimates of Mineral Resources. The estimation of Mineral Resources is inherently uncertain and involves subjective judgments about many relevant factors. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The accuracy of any such estimates is a function of the quantity and quality of available data, and of the assumptions made and judgments used in engineering and geological interpretation (including estimated future production from the Projects, the anticipated tonnages and grades that will be mined and the estimated level of recovery that will be realized), which may prove to be unreliable and depend, to a certain extent, upon the analysis of drilling results and statistical inferences that may ultimately prove to be inaccurate. Mineral Resource Estimates may have to be re-estimated based on: (i) fluctuations in copper, nickel, PGE, gold, zinc or other mineral prices; (ii) results of drilling; (iii) metallurgical testing and other studies; (iv) proposed mining operations, including dilution; (v) the evaluation of mine plans subsequent to the date of any estimates; and (vi) the possible failure to receive required permits, approvals and licences.

Forward-looking statements involve significant risks and uncertainties, should not be read as guarantees of future performance or results, and will not necessarily be accurate indicators of whether or not such results will be achieved. A number of factors could cause actual results to differ materially from the results discussed in the forward-looking statements, including, but not limited to, the factors discussed below and under "*General Development of the Business - Risk Factors*", as well as unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities; the failure of parties to contracts with the Company to perform as agreed; social or labour unrest; changes in commodity prices; and the failure of exploration programs or studies to deliver anticipated results or results that would justify and support continued exploration, studies, development or operations.

Although the forward-looking statements contained in this AIF are based upon what management of the Company believes are reasonable assumptions, the Company cannot assure readers that actual results will be consistent with these forward-looking statements. The Company's actual results could differ materially from those anticipated in these forward-looking statements, as a result of, amongst others, those factors noted above and those listed under the heading "*Description of the Business - Risk Factors*". These forward-looking statements are made as of the date of this AIF and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the Company assumes no obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this AIF.

## DEFINITIONS AND OTHER INFORMATION

### Currency

All references to “\$”, “US\$” or “dollars” in this AIF mean U.S. dollars, unless otherwise indicated. References to “C\$” mean Canadian dollars.

### Definitions

Attached at Schedule “A” to this AIF are tables setting out defined terms and a *Glossary of Mining Terms and Abbreviations*.

### Scientific and Technical Information

The scientific and technical information with respect to the Projects contained in this AIF is derived from the Kamoia Technical Report, the Platreef Technical Report and the Kipushi Technical Report (collectively, the “**Technical Reports**”). The technical information in this AIF has been updated with current information where applicable. The full text of the Technical Reports have been filed with Canadian securities regulatory authorities pursuant to NI 43-101 and are available for review under the Company’s SEDAR profile at [www.sedar.com](http://www.sedar.com). For definitions of certain technical terms used in this AIF, see “*Glossary of Mining Terms and Abbreviations*” in Schedule A.

Stephen Torr, P. Geo., an employee of Ivanhoe, has reviewed and approved the scientific and technical information in respect of the Projects contained in this AIF. Mr. Torr is considered, by virtue of his education, experience and professional association, to be a qualified person for the purposes of NI 43-101. Mr. Torr is not independent within the meaning of NI 43-101.

## **CORPORATE STRUCTURE OF THE COMPANY**

### **Name, Address and Incorporation**

The Company was originally incorporated under the Company Act (British Columbia) on April 29, 1993 under the name KBK No. 7 Ventures Ltd. The Company changed its name to African Gold Corp. on April 28, 1994, and on November 9, 1994, it again changed its name to African Minerals Corp. The Company continued under the Business Corporations Act (Yukon) on May 5, 1995. On May 20, 1998, the Company amalgamated with China Industrial Minerals Company Ltd., a Yukon corporation and changed its name to become African Minerals Limited. On March 25, 2004, the Company changed its name to Ivanhoe Nickel & Platinum Ltd. On May 6, 2011 the shareholders of the Company approved the Reorganization which was thereafter completed in a series of steps between June 2011 and September 2012 as further described below. The Company changed its name to Ivanhoe Mines Ltd. on August 28, 2013.

The Class A Shares were listed for trading on the TSX on October 23, 2012 under the trading symbol “IVP” which changed to “IVN” on September 3, 2013 following the name change to Ivanhoe Mines Ltd.

The Company’s head office and registered office is located at 654 – 999 Canada Place, Vancouver, British Columbia, V6C 3E1.

### **Reorganization**

The Reorganization involved four amendments to the corporate organization of Ivanhoe. It was implemented in a series of stages, as follows:

- (a) on June 2, 2011, the Company changed its name from “Ivanhoe Nickel & Platinum Ltd.” to “Ivanplats Limited”;
- (b) on August 10, 2011, the Company completed a five-for-one stock split of the Original Common Shares;
- (c) on September 11, 2012, the Company completed: (i) a reclassification of each outstanding Original Common Share as a Class B Share; and (ii) the creation of a new class of common shares, being the Class A Shares; and
- (d) Ivanhoe completed the final step of the Reorganization, continuing from the *Business Corporations Act* (Yukon) to the BCBCA, effective September 11, 2012.

One of the principal purposes of the Reorganization was to establish a lock-up of existing shareholders and certain convertible security holders of the Company. The lock-up arrangements were structured by first separating the share capital of the Company between existing shareholders, by designating their shares, the Original Common Shares, as Class B Shares, and creating a new class of shares, Class A Shares, which were offered in the IPO. The reclassification preserves existing shareholders’ rights to vote, to receive dividends and to an equal share of the Company’s assets upon winding up or dissolution, but imposes a restriction on transfer that inhibits liquidity until such time as the Class B Shares are converted to Class A Shares. Such conversion occurs automatically 39 months after the IPO Date.

Holders of Class B Shares have a conditional right of early conversion into Class A Shares. The right of early conversion may be exercised at any time, but is conditional upon the holders of Class B Shares signing a Conversion Lock-up Agreement. Holders of Class B Shares who sign the Conversion Lock-up Agreement and convert their Class B Shares to Class A Shares will then have such Class A Shares released from the restrictions on Disposition as per the terms of the Conversion Lock-up Agreement, which are as follows:

- **Quarterly Releases.** Commencing six months following the IPO Date, each Lock-up Shareholder's Class A Shares will be released from the restrictions on Disposition as follows:

Date of Release	Percentage Released	Cumulative Percentage Released <sup>(1)</sup>	Date of Release	Percentage Released	Cumulative Percentage Released <sup>(1)</sup>
April 23, 2013	8%	8%	October 23, 2014	8%	56%
July 23, 2013	8%	16%	January 23, 2015	8%	64%
October 23, 2013	8%	24%	April 23, 2015	9%	73%
January 23, 2014	8%	32%	July 23, 2015	9%	82%
April 23, 2014	8%	40%	October 23, 2015	9%	91%
July 23, 2014	8%	48%	January 23, 2016	9%	100%

Notes:

<sup>(1)</sup> The aggregate quarterly release percentages are based on the Class B Shares held by such Lock-up Shareholder as at the date of conversion into Class A Shares pursuant to such Lock-up Shareholder's Conversion Lock-up Agreement and will not be adjusted to reflect shares released in Board-directed releases. As such, it is possible that all Class A Shares will be released prior to termination of the Lock-up Period.

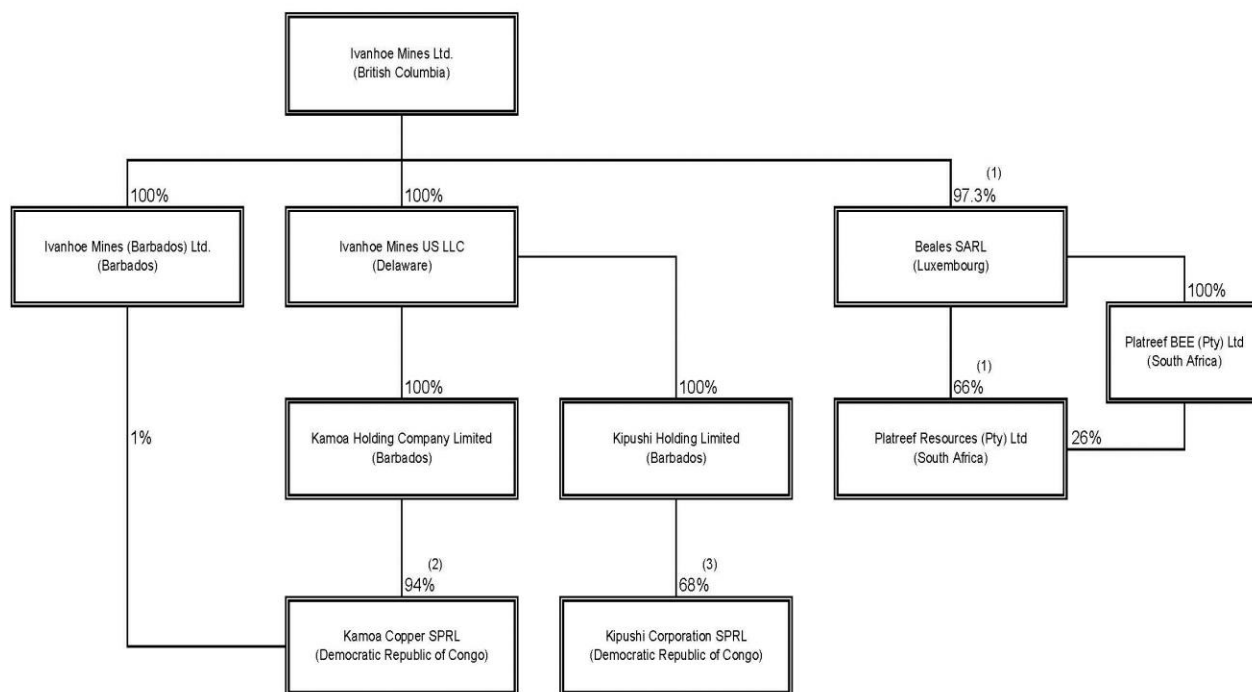
- **Small Holding Release.** All shareholders that entered into a Conversion Lock-up Agreement who owned, of record or beneficially, an aggregate of 100,000 or fewer Class A Shares and Class B Shares on the date of such Conversion Lock-up Agreement had, on April 22, 2013, all their Class A Shares released from the Conversion Lock-up Agreement restrictions on Disposition.
- **Board-directed Release.** The Board has the discretion to convert all Class B Shares and all or a *pro rata* portion of all Class A Shares subject to a Conversion Lock-up Agreement into Class A Shares at any time.

As a result, Lock-up Shareholders will have all their Class A Shares released from the lock-up a maximum of 39 months after the IPO Date, with the majority of those shares released before that time. Existing shareholders who do not convert will continue to hold Class B Shares which will automatically convert into Class A Shares on January 23, 2016, or on such earlier date as may arise pursuant to the provisions of the Class B Shares. See "*Description of Capital Stock – Class B Shares*".



## Intercorporate Relationships

References in this AIF to the business of the Company include the business conducted by its material subsidiaries. The following sets forth the name and jurisdiction of incorporation of the Company and its material subsidiaries, as at March 28, 2014.



Notes:

- (1) Itochu, together with ITC Platinum, holds an effective 10% equity interest in Platreef Resources (Pty) Ltd, directly and indirectly, through an interest in Beales Sarl. See “*Material Contracts - Itochu Investment*”.
- (2) The remaining 5% is held by the DRC state in accordance with the DRC Mining Code. The Company has offered to sell a further 15% interest to the DRC on commercial terms to be negotiated. See “*Description of the Business - Kamoa Project*”.
- (3) The remaining 32% in KICO is held by Gécamines.

## GENERAL DEVELOPMENT OF THE BUSINESS

### Overview

Ivanhoe is a mineral exploration and development company, whose principal properties are located in Africa. The Company, and its founder Robert Friedland, have been active in South Africa since 1994 and in the DRC since 1996, focusing on exploration within the Central African Copperbelt and the Bushveld Complex. The Company currently has three key assets:

- *The Kamoa Project*, a large high-grade copper deposit discovered by the Company beyond the previously known western limit of the Central African Copperbelt, in Katanga Province, DRC.
- *The Platreef Project*, where the Company discovered a high grade-thickness PGE, gold, nickel and copper deposit on the northern limb of the Bushveld Complex, in South Africa.
- *The Kipushi Project*, a past-producing high-grade underground zinc and copper mine in the Central African Copperbelt, in Katanga Province, DRC.

The Company also holds interests in prospective mineral properties in the DRC, Gabon, and Australia, including a land package of ~6,500 km<sup>2</sup> in the Central African Copperbelt with drill-ready grass-roots prospects.

### Three Year History

#### 2011

In January 2011, Ivanhoe raised approximately \$23 million under a private placement of 1,500,000 units at a price of \$15.00 per unit. Each unit consisted of one Original Common Share, one half of one warrant to purchase an Original Common Share and one liquidity right in each case before taking account of the five-for-one stock split that occurred as part of the Reorganization.

In June 2011, Ivanhoe closed the Joint Operation and Investment Agreement pursuant to which Ivanhoe sold an effective 8% participating interest in the Platreef Project to Itochu and other Japanese investors for approximately \$280 million. See “*Material Contracts - Itochu Investment*”.

In November 2011, Ivanhoe issued \$115 million principal amount of convertible senior unsecured bonds (the “**2011 Pre-IPO Bonds**”).

In November 2011, Ivanhoe acquired 68% of the issued share capital of KICO from Kipushi Vendor for initial consideration of \$45 million, pursuant to a share purchase and sale agreement among Kipushi Holding, FPL, Ivanhoe and Kipushi Vendor.

#### 2012

In March 2012, Ivanhoe issued an additional \$50 million principal amount of convertible senior unsecured bonds (the “**2012 Pre-IPO Bonds**” and together with the 2011 Pre-IPO Bonds, the “**Pre-IPO Bonds**”).

In August 2012, the government of the DRC approved Ivanhoe’s application to convert three existing exploration permits at its Kamoa Project into exploitation permits (the “**Kamoa Exploitation Licences**”). See “*Description of the Business - Kamoa Project*”.

In September 2012, Ivanhoe transferred, for no consideration, a 5% non-dilutable interest in the share capital of Kamoa Copper, the subsidiary that holds the Company's interest in the Kamoa Project, to the DRC state pursuant to the DRC Mining Code.

In October 2012, the Company successfully closed its IPO. A total of 63,327,000 Class A Shares were issued from treasury at a price of C\$4.75 per share resulting in approximately C\$300 million in gross proceeds to the Company. In connection with the IPO, the Pre-IPO Bonds, representing an aggregate indebtedness of C\$193 million (consisting of the principal amount plus accrued interest) were converted into 40,716,333 Class A Shares, in full satisfaction of the indebtedness represented thereby.

In November 2012, the Company issued 1,031,000 Class A Shares at a price of C\$4.75 pursuant to the partial exercise by the Underwriters of the over-allotment option granted by the Company to the Underwriters in the Underwriting Agreement for the IPO.

## 2013

In January 2013, the Company updated the Mineral Resource Estimate at the Kamoa Project, reporting Indicated Mineral Resources of 739 Mt grading 2.67% Cu, containing 43.5 billion pounds of copper and Inferred Mineral Resources of 227 Mt grading 1.96% Cu, containing 9.8 billion pounds of copper, in each case at a 1% Cu cut-off grade and a minimum vertical thickness of three metres.

In February 2013, the Company completed a new Mineral Resource Estimate on the Platreef Project, which was subsequently confirmed and updated by AMEC E&C Services in March 2013. The new Mineral Resource Estimate amenable to selective mining methods and in respect of the Flatreef portion of the property reported 214 Mt of Indicated Mineral Resources grading 4.1 g/t 3PE+Au, 0.34% Ni and 0.17% Cu and 415 Mt Inferred Mineral Resources grading 3.5 g/t 3PE+Au, 0.33% Ni and 0.16% Cu. The 2 g/t grade shells used during construction of the 3D block model showed an average thickness of 24.3 m in the area comprising the Indicated Mineral Resource Estimate and 18.0 m in the area comprising the Inferred Mineral Resource Estimate.

In June 2013, the Company filed an application for a mining right with South Africa's Department of Mineral Resources (a "**Mining Right Application**") for the Platreef Project.

In August 2013, the Company changed its name to Ivanhoe Mines Ltd.

In September 2013, the DMR approved the Company's application to sink a bulk-sample shaft at the Platreef Project.

In October 2013, Ivanhoe completed a non-brokered private placement of 54,000,000 Class A Shares at a price of C\$2.00 per share resulting in C\$108 million in gross proceeds to the Company. Ivanhoe's Executive Chairman, Robert Friedland, subscribed for C\$25 million of the offering, effectively proportionate to his holding in the Company.

In November 2013, Ivanhoe updated its independent Preliminary Economic Assessment of the Kamoa Project ("**Kamoa PEA**"). The updated Kamoa PEA reported a pre-tax net present value, at an 8% discount rate of \$4.3 billion and an IRR of 18.4% (after-tax, net present value, at an 8% discount rate of \$2.6 billion and an IRR of 15.3%) for a two-phased development of Kamoa, which is expected to reach steady-state production of 300,000 tonnes per year of blister copper.

## **2014 to date**

In March 2014, Ivanhoe completed an independent Preliminary Economic Assessment of the Platreef Project (“**Platreef PEA**”). The Platreef PEA reported an after-tax net present value, at an 8% discount rate of \$1.6 billion and an IRR of 14.3% for the base case, 8 Mtpa concentrator case, which is expected to reach production of 785,000 3PE+Au ounces per year.

## **DESCRIPTION OF THE BUSINESS**

### **General**

The Company’s strategy is to build a global, commodity-diversified mining and exploration company. Ivanhoe’s principal properties are located in Africa. The Company has focused on exploration within the Central African Copperbelt and the Bushveld Complex.

The Company currently has three key assets: (i) the Kamoa Project; (ii) the Platreef Project, and (iii) the Kipushi Project. In addition, the Company holds interests in prospective mineral properties in the DRC, Gabon, and Australia, including a land package of ~6,500km<sup>2</sup> in the Central African Copperbelt with drill-ready grass-roots prospects. Advancing the Kamoa and Platreef Projects from discovery to production is a key near-term objective, which, in the case of the Platreef Project, includes conversion of its exploration permits or rights into exploitation permits or mining rights, and establishing resource mineability via underground access. At the Kipushi Project, underground access is being refurbished to facilitate conversion of historical resource estimates to current Mineral Resource Estimates, and for near-mine exploration. Exploration will continue to play a key role in the Company’s business strategy through the evaluation of land positions derived from both grass-roots efforts and acquisitions. The Company also plans to advance its various exploration properties, primarily in the DRC, and add to its portfolio of mineral properties.

## **KAMOA PROJECT**

### **Project Description and Location**

The Kamoa Project comprises a newly discovered, very large stratiform copper deposit with adjacent prospective exploration areas, located within the Central African Copperbelt in Katanga Province, DRC. The Kamoa Project lies approximately 25 km west of the town of Kolwezi, and about 270 km west of the provincial capital of Lubumbashi. Ivanhoe owns a 95% interest in the Kamoa Project. Furthermore, the Company has offered to sell an additional 15% interest to the DRC on commercial terms to be negotiated.

The Kamoa Project consists of the Kamoa Exploitation Licences (exploitation permits 12873, 13025 and 13026) and one exploration permit, 705. The Kamoa Exploitation Licences cover an area of 397.4 km<sup>2</sup>, and the exploration permit covers 1.7 km<sup>2</sup> for a total project area of 399.1 km<sup>2</sup>. The Kamoa Exploitation Licences, approved August 20, 2012, grant Ivanhoe the right to explore for, develop and exploit copper and other minerals, for an initial 30 year term, expiring August 19, 2042. The permits can then be extended for 15 year periods, until the end of the mine’s life.

Title to the Kamoa Project resides with Kamoa Copper, a subsidiary of Ivanhoe, which is the holder of the Kamoa Exploitation Licences.

Those portions of the original exploration permits 702, 703 and 705 not covered by the Kamoa Exploitation Licences remain as exploration permits. The current exploration permits are in good standing and will expire on May 10, 2015. Under the DRC Mining Code, Ivanhoe is entitled to one

further renewal for a five year term, subject to surrendering 50% of the area of each exploration permit concurrent with the renewal.

A number of payments are required to keep each of the Kamoa Exploitation Licences and the remaining exploration permits in good standing. With respect to the Kamoa Exploitation Licences, an annual levy on the total surface area of each licence is payable on a per hectare basis, increasing on a sliding scale for each year until 2016, after which the rate remains constant. An additional duty, payable annually to the Cadastre Minier (a public entity supervised by the Minister of Mines and the Minister of Finance), is levied on the number of quadrangles held. With respect to the remaining exploration permits, two fees levied annually are based on the number of quadrangles held by permit type (surface rights fee) and on the surface area held under permits (land tax), as set out in the DRC Mining Code. Ivanhoe is also required to submit an annual exploration report outlining where exploration will take place for the ensuing year. Ivanhoe paid all fees and filed its annual report in December 2013, which addresses planned exploration activities in 2014.

All work undertaken on the Kamoa Project to date has been performed under work permits. A mitigation and rehabilitation plan was prepared in accordance with the requirements of the DRC Mining Code. Sample site, drill site, and campsite rehabilitation work is carried out progressively during exploration programs, and at program completion. Current environmental liabilities relating to Ivanhoe's exploration work are minor and restricted to the vicinity of the exploration camp.

The Kamoa Project area is sparsely inhabited. The Company has identified a single holder of formal surface rights within the Kamoa Project area. Negotiations are currently underway to finalise the transfer of these rights to Ivanhoe. Compensation related to land access for the exploration programs completed to date has been successfully negotiated and has not amounted to a material cost to the Company.

The actual number and type of ancillary permits required will be identified during advanced studies on the development of the Kamoa Project. Such permits could include provision for disposal of waste, fuel and reagent transport and storage, zoning applications, water supply, and use and storage of explosive materials.

Pursuant to the DRC Mining Code, the grant of the Kamoa Exploitation Licences on August 20, 2012 triggered an obligation on the part of Ivanhoe to transfer to a DRC state-owned nominee, for no consideration, a non-dilutable 5% interest in Kamoa Copper within 30 working days. On September 11, 2012, the Company satisfied this obligation by transferring 5% of the share capital of Kamoa Copper to the DRC state.

In addition, during the application process for the grant of the Kamoa Exploitation Licences, Ivanhoe engaged in discussions with the DRC government regarding the nature of the DRC's participation in the Kamoa Project. These discussions culminated in correspondence by Ivanhoe in which the Company offered to sell a further 15% interest in Kamoa Copper to the DRC on commercial terms. Such commercial terms are subject to future negotiation between Ivanhoe and the DRC government. Ivanhoe has also indicated its willingness to participate, in conjunction with the DRC government, DRC state-owned utilities, other mining companies and interested parties in the region, in the enhancement of rail and power infrastructure in Katanga Province.

### **Mineral Resource Estimation**

The Mineral Resources are estimated based on drilling up to December 10, 2012, and are supported by 555 drill holes (543 drill holes are in the Domain1 area, where Indicated and Inferred Mineral Resources are estimated, and an additional 12 are in Domain2 area, where the exploration target is estimated). Based on the drilling that was ongoing when the Kamoa PEA report was filed, in AMEC's opinion the

drilling was likely to be at a sufficiently close spacing by the end of the first quarter of 2014 to support completion of detailed engineering studies. Areas outlined by core drilling at 800 m spacing with a maximum extrapolation distance of 600 m between drill sections, and which show continuity of grade at 1% Cu, geological continuity, and continuity of structure (broad anticline with local discontinuities that are likely faults) were classified as Inferred Mineral Resources over an area of ~20.5 km<sup>2</sup>. Mineral Resources within an area of 50.5 km<sup>2</sup> drilled on 400 m spacing and which display grade and geological continuity were classified as Indicated Mineral Resources. The total area of the Kamoia Project is ~400 km<sup>2</sup>.

The Kamoia Project Mineral Resources are as follows:

### Kamoia Project Mineral Resources

(1% Cu Cut-off Grade)

Category	Tonnage (Mt)	Area (km <sup>2</sup> )	True Thickness (m)	Copper (% Cu)	Contained Copper	
					(kt)	(Billion lbs)
Indicated	739	50.5	5.20	2.67	19,700	43.5
Inferred	227	20.5	3.84	1.96	4,460	9.8

Notes:

- (1) Mineral Resources have an effective date of December 10, 2012. Harry M. Parker and Gordon Seibel, both SME Registered Members, are the Qualified Persons responsible for the Mineral Resource Estimates. The Mineral Resource Estimate was prepared by Mr. Seibel.
- (2) Mineral Resources are reported using a total Cu cut-off grade of 1% Cu and a minimum assumed thickness of 3 m. A 1% Cu cut-off grade is typical of analogue deposits in Zambia. There are reasonable prospects for economic extraction under assumptions of a copper price of \$3.00/lb; sulphuric acid credits of \$300/t of acid produced; employment of underground mechanized room-and-pillar mining methods; and that copper concentrates will be produced and smelted.
- (3) Reported Mineral Resources contain no allowances for hanging wall or footwall contact boundary loss and dilution. No mining recovery has been applied.
- (4) The Mineral Resources include the mineralization above a 1% total Cu cut-off that is potentially amenable to open pit mining.
- (5) Tonnage and grade measurements are in metric units. Contained copper tonnes are reported using metric units; contained copper pounds use imperial units.
- (6) True thickness ranges from 2.4 metres to 17.6 metres for Indicated Mineral Resources and 2.8 metres to 8.4 metres for Inferred Mineral Resources.
- (7) Depth of mineralization below the surface ranges from 10 metres to 1,320 metres for Indicated Mineral Resources and 20 metres to 1,560 metres for Inferred Mineral Resources.
- (8) Tonnages are rounded to the nearest million tonnes; grades are rounded to two decimal places.
- (9) Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content.
- (10) Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Furthermore, Kamoia Project mineralization defined by a 2.0% Cu cut-off applied to resource model blocks is generally contiguous, with only a few isolated areas of lower-grade material. This high-grade sensitivity case has Indicated Mineral Resources of 550 Mt at 3.04% Cu and Inferred Mineral Resources of 93 Mt at 2.64% Cu.

### Targets for Additional Exploration

There are a number of identified exploration targets and exploration prospects within the Kamoia Project that have been identified for further exploration with a view to expanding the area of known mineralization. In the opinion of AMEC, the exploration potential for expanding the area of known mineralization with more drilling is excellent.

In particular, there is an area inside the model perimeter surrounding the Indicated Mineral Resources and Inferred Mineral Resources that has been designated an exploration target. This target, based on limited drilling and which can only be expressed as a range of tonnage and grade (estimated by constructing an inverse distance model to the fifth power for the area and applying a ±20% variance to the tonnages and grades), could contain an aggregate of 520 to 790 Mt grading 1.6% to 2.5% Cu.

*This exploration target is conceptual in nature and there has been insufficient exploration to define such exploration target as Mineral Resources. It is uncertain if further exploration will result in this exploration target being delineated as a Mineral Resource.*

In addition to the exploration target, additional exploration prospects exist:

- the ~10 km long, eastern boundary of the Mineral Resources is defined solely by the current limit of drilling, at depths ranging from 600 m to 1,560 m. Some of the best grade-widths of mineralization occur here, and high-grade bornite-dominant mineralization is common. Beyond these drill holes the mineralization and the deposit are untested and open to expansion, even beyond the exploration target group defined above; and
- along strike to the south of the Mineral Resources where there are additional copper-in-soil anomalies.

Currently, there is insufficient information to project a range of tonnage and grade for these exploration prospects, although some of the area that has been drill-tested (four drill holes) has intersected thick mineralization with similar stratigraphy to that found around the Makalu dome. There is potential to find additional mineralization over large areas of the Kamoa Exploitation Licences. Drilling is planned through 2014 on these areas.

The exploration potential for expanding the area of known mineralization with more drilling is excellent.

### **Preliminary Economics**

In November 2013, Ivanhoe issued an updated Preliminary Economic Assessment of the Kamoa Project, with reference to the Mineral Resource Estimates available at that time. The Kamoa PEA reflects a two-phased approach to development of the Kamoa Project. The first phase of mining would target high-grade copper mineralization from shallow, underground resources to yield a high-value concentrate. The second phase would entail a major expansion of the mine and mill and construction of a smelter to produce blister copper.

The initial mining rate and concentrate feed capacity of three million tonnes per year would be followed in Year 5 by an additional expansion of eight million tonnes per year in concentrator capacity and the construction of an on-site smelter with a capacity to produce 300,000 tonnes per year of blister copper. In addition, an estimated 1,600 tonnes of sulphuric acid per day would be produced as a by-product in the copper smelting process. The Kamoa PEA contemplates that the sulphuric acid produced at Kamoa would be sold to copper-oxide mining operations on the Central African Copperbelt that currently purchase acid from Zambia or from overseas.

The Preliminary Economic Assessment envisions a three year development period from the completion of a Feasibility Study (which would provide a basis for a mine development decision).

Assuming a long term copper price of \$3.00/lb, the economic analysis returns a net present value at a real 8% discount rate of \$2.59 billion (after tax). The after tax internal rate of return is 15% and provides a payback period of 8.3 years. The life-of-mine average total cash cost, after credits, is \$1.19 per pound of copper. Economics improve to a net present value of \$4.16 billion (after tax, at an 8% discount rate) when a long term copper price of \$3.50/lb is assumed.

*Readers are cautioned that this Preliminary Economic Assessment is preliminary in nature as it includes Inferred Mineral Resources which are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as Mineral Reserves. There is*

*no certainty that the projected results will be realized. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.*

The Kamoa Project's returns are set out below at long-term copper prices of \$3.00/lb and \$3.50/lb.

	<b>Long Term Cu Price</b>	
	<b>\$3.00/lb</b>	<b>\$3.50/lb</b>
Net Present Value		
(8% discount rate, \$ millions)	2,590	4,155
Internal Rate of Return (%)	15.3%	19.1%

The following table sets out the mining, processing, production and operating cost estimates:

	<b>Total Life of Mine</b>	<b>Life of Mine Average</b>
Plant Feed Mined ('000 t)	326,064	10,869
Plant Feed Treated ('000 t)	326,064	10,869
Copper Feed Grade (%)		3.00%
Copper Recovery (%)		85.9%
Concentrate Produced ('000 t)	21,802	727
Copper Concentrate Grade (%)		39.0%
Contained Copper in Concentrate ('000 t)	8,508	284
	<b>Payable Copper</b>	
Copper ('000t)	8,318	277
Copper (Mlb)	18,338	611
	<b>\$/lb Payable Copper</b>	
Total Cash Costs Before Credits		1.38
Total Cash Costs After Credits		1.19

Given the Kamoa Project's significant estimated Mineral Resource tonnage and its large lateral extent, potential mining rates could increase, through operating in multiple mining areas and through a series of production expansions to maximize extraction of the Mineral Resources. If mining rates were to increase further this may allow for a more efficient use of deployed capital.

### *Mining Operations*

The mine production schedule was developed prioritizing the higher grade areas during the initial years of concentrate sales and targeting a 30 year mine plan at an annual blister copper production rate of 300 kt. The mine production ramps up consistently over a nine year period to achieve steady-state production. Mine production begins two years ahead of concentrate production to stockpile an inventory of material to be milled.

The mining rate increases to achieve the 300 ktpa blister copper production rate in the 6<sup>th</sup> year of mine production at an approximate rate of 11 Mtpa. Near the end of the 30 year mine plan, as the average mine grade declines, the mining rate is in excess of 14 Mtpa. This 30 year mine plan results in production of 326 Mt of the Kamoa PEA inventory at a grade of 3.00% Cu, leaving 308 Mt at 1.85% Cu remaining in the Mineral Resource at the end of the 30 year mine plan. The Company would initially access the Kansoko Sud section, while developing additional accesses to the Kamoa Sud and Kamoa Nord sections.

Given the favourable mining characteristics of the Kamoa deposit as derived from the December 2012 mineral resource, including its relatively undeformed, continuous mineralization, local continuity between close-spaced drillholes and flat to moderate dips, it is considered amenable to large-scale



mechanized room-and-pillar or drift-and-fill mining. The principal mining method for the shallower resources will be room-and-pillar while drift-and-fill will be used for resources at greater depths.

### *Processing*

All mined material will be conveyed from the primary crusher, situated underground, to the surface via an incline conveyor and then via overland conveyor to the crushing plant. After two additional crushing stages the material will be stockpiled ahead of the concentrator. The concentrator includes primary and secondary ball milling, a rougher flotation circuit and concentrate production operations such as rougher concentrate regrind milling, cleaner flotation circuits and a concentrate thickening and filtration circuit. Metallurgical recovery rates for concentrate production are estimated at a life of mine average of 85.9% with an average copper concentrate grade of 39.0%.

In the second, blister phase, the concentrate would then be smelted on site to produce blister copper. A mixture of damp concentrate and limestone flux would be conveyed to a drying facility, followed by a flash smelting process. Smelting will be conducted in a direct to blister furnace that consists of a feed system, a concentrate burner, a horizontal settler chamber and gas offtake facilities. Slag from the flash smelter will be processed in additional electric furnaces to recover more blister copper.

This smelting process also includes a sulphuric acid plant that is designed to treat sulphur dioxide gas. The blister and anode furnaces generate sulphur dioxide gas, and the sulphuric acid plant will treat this gas and produce a sulphuric acid by-product for commercial sale. The estimated product quality is 98.5% sulphuric acid. The operating cost of the sulphuric acid plant is included in the smelting process so there is no incremental cost associated with this production. Therefore, the sulphuric acid by-product sold becomes a credit against the cost of copper smelting.

### *Infrastructure, Capital and Operating Costs*

#### *Infrastructure*

As the Kamoanga Project is a greenfield project, it will require the development of new infrastructure to conduct mining and processing operations. In addition to mine development and processing infrastructure, Ivanhoe contemplates developing power, transportation, water, housing and other ancillary infrastructure.

Ivanhoe is in the process of securing sources of power through a joint development with La Société Nationale d'Électricité SARL ("SNEL"), the state power company of the DRC. In June 2011, Ivanhoe and SNEL executed a memorandum of understanding (the "MOU") by which the parties agreed to rehabilitate two existing hydroelectric plants, Mwadingusha and Koni, that have an aggregate generation capacity of 113 MW. The cost of the rehabilitation will be financed by Ivanhoe through a loan to SNEL although the projects will be jointly developed by SNEL and Ivanhoe. The loan will be repaid by SNEL through a deduction from the Company's monthly power bills incurred over the life of the loan. The MOU contemplates that following such an upgrade, Ivanhoe would have an entitlement of up to 100 MW from those facilities, which the Company believes to be sufficient for the infrastructure contemplated in the mine plan for the initial, concentrate phase. The MOU led to the signing of a pre-financing agreement with SNEL in June 2012 for rehabilitation works on the Mwadingusha power plant. This pre-financing agreement stipulates the Company's exclusivity to conduct full rehabilitation on both the Mwadingusha and Koni plants. In April 2013, Ivanhoe signed a further memorandum of understanding with SNEL to upgrade a third hydroelectric power plant, Nzilo 1, to its design capacity of 111 MW. Similar to the June 2011 MOU, Ivanhoe would finance the refurbishment of Nzilo 1 through a repayable loan to SNEL and SNEL would grant Ivanhoe a priority entitlement to power from the power grid. Nzilo 1, Mwadingusha and Koni could produce a combined total of 200 MW, which the Company believes to be sufficient for

the infrastructure contemplated in the mine plan for the second, blister phase. In March 2014, the Company signed a financing agreement with SNEL governing the terms of the rehabilitation of the Mwadingusha, Koni and Nzilo 1 power plants. Finally, transmission lines run within 10 km of the Kamoa Project, which could be extended to the Kamoa Project.

Ivanhoe will also need to consider logistics and transportation infrastructure. It is currently anticipated that during the initial production phase copper concentrate will be transported via road to Ndola in Zambia and thereafter via rail to Durban in South Africa. In the blister copper production phase product will be transported via rail from Kamoa to Lobito harbor in Angola.

Water is abundant in the area and Ivanhoe anticipates that it will be able to secure a nearby water source for its operations as part of further mine development planning. Preliminary water studies have identified both underground and surface water sources, specifically the aquifer developed within the sandstone forming the Kamoa and Makalu Domes and the footwall to the mining operations, and the Mutaka Dam, approximately 13 km to the east of the proposed plant site.

Ivanhoe contemplates constructing office and administrative facilities, an employee village with housing, recreation and other amenities, including a medical facility and other associated infrastructure.

#### *Capital Costs and Operating Costs*

Ivanhoe estimates that capital costs for initial development of mining operations, concentrator, and other ancillary on-site facilities, including contingency, will amount to approximately \$1.4 billion. This is followed by approximately \$3.5 billion of capital costs associated with expanding, prior to Year 5 (when the blister copper production phase commences), mining operations, the concentrator and other ancillary on-site facilities, as well as the smelter and incremental power, all inclusive of contingency.

## Capital Investment Summary

US\$M	Conc. Phase	Blister Phase	Sustaining	Total
<b>Mining</b>				
Underground Mining	259	1,125	1,864	3,248
Capitalised Pre-Production	41	–	–	41
<b>Subtotal</b>	<b>301</b>	<b>1,125</b>	<b>1,864</b>	<b>3,290</b>
<b>Power &amp; Smelter</b>				
Smelter	–	539	297	836
Power	141	100	–	241
<b>Subtotal</b>	<b>141</b>	<b>639</b>	<b>297</b>	<b>1,077</b>
<b>Concentrator</b>				
Concentrator	214	312	207	734
<b>Subtotal</b>	<b>214</b>	<b>312</b>	<b>207</b>	<b>734</b>
<b>Infrastructure &amp; Tailings</b>				
Infrastructure	81	133	61	274
TSF	73	181	–	254
Accommodation	75	10	25	111
Rolling Stock & Spur	–	46	–	46
<b>Subtotal</b>	<b>229</b>	<b>370</b>	<b>86</b>	<b>685</b>
<b>Indirects</b>				
EPCM	79	220	–	299
Temporary Facilities	43	78	–	121
<b>Subtotal</b>	<b>122</b>	<b>298</b>	<b>–</b>	<b>420</b>
<b>Owners Cost (incl. Drilling &amp; Studies)</b>				
Owners Cost	103	67	–	171
Closure	–	–	226	226
<b>Subtotal</b>	<b>103</b>	<b>67</b>	<b>226</b>	<b>396</b>
<b>Capital Expenditure Before Contingency</b>	<b>1,110</b>	<b>2,812</b>	<b>2,680</b>	<b>6,602</b>
Contingency	292	717	–	1,009
<b>Capital Expenditure After Contingency</b>	<b>1,402</b>	<b>3,529</b>	<b>2,680</b>	<b>7,611</b>

Sustaining capital expenditure, including underground mining development, is estimated to amount to an additional \$2.7 billion spread over the 30 year mine life.

Operating costs include estimates for underground mining, processing, smelting, general and administrative expenses, transport, refining and other realization costs. The total cash cost is estimated to be \$1.38 per pound of copper on average over the life of the mine, reducing to \$1.19 per pound of copper on average over the life of the mine after accounting for sulphuric acid by-product credits.

### *Sensitivity Analysis*

The Kamoia Project phased development plan returns a net present value of \$2.59 billion (after tax), assuming a long term copper price of \$3.00/lb and a long term acid by-product price of \$250/t, at a 8%

discount rate. The after tax internal rate of return is 15.3% and the payback period is 8.3 years. Set forth below is a summary of these amounts as well as net present values at alternative discount rates:

	Discount Rate	Before Taxation	After Taxation
Net Present Value (\$ billions)	Undiscounted	25.50	17.64
	6.0%	6.68	4.28
	8.0%	4.28	2.59
	10.0%	2.70	1.48
IRR		18.4%	15.3%
Project Payback (years)		7.6	8.3

Cash flow sensitivity to copper price variation is shown in the table below, for copper prices from \$2.50/lb Cu to \$3.50/lb Cu. The cash flow includes revenue from acid that would be produced in the smelter.

### Copper Price Sensitivity

Net Present Value (\$ millions)	Copper Price (\$/lb)				
	2.50	2.75	3.00	3.25	3.50
<b>Discount Rates</b>					
<b>6.0%</b>	2,154	3,217	4,277	5,336	6,392
<b>8.0%</b>	1,016	1,805	2,590	3,374	4,155
<b>10.0%</b>	282	882	1,479	2,075	2,667
<b>IRR</b>	11.1%	13.3%	15.3%	17.2%	19.1%

The credit from sulphuric acid revenue represents 6% of gross revenue. If a long term acid by-product price of \$500/t were achieved from sales then the after tax net present value at a 8% discount rate would be increased by 22%.

### Sulphuric Acid Price Sensitivity

Acid Price (\$/t)	-	125	250	375	500
<b>Net Present Value, at 8%</b> <b>(\$ millions)</b>	2,025	2,308	2,590	2,872	3,154
<b>% Change</b>	-22%	-11%	0%	11%	22%

The sensitivity of after tax net present value at a 8% discount rate to initial capital cost, direct operating costs and copper feed grade is shown below.

### Additional Sensitivities

Variable	Units	Base	Change from Base Case <sup>(1)</sup> Net Present Value, at 8% (\$ millions)		
			-10%	+10%	+25%
Initial Capital	\$ millions	<b>1,402</b>	115	(115)	(288)
Direct Operating Costs <sup>(2)</sup>	\$/t	<b>59</b>	312	(312)	(780)
Cu Feed Grade	%Cu	<b>3.00</b>	(875)	876	2,188

<sup>(1)</sup> Base Case after tax net present value, at an 8% discount rate is \$2,590 million.

<sup>(2)</sup> Life of mine site operating costs per tonne milled.

### Markets and Contracts

To date Ivanhoe has not advanced contract and market studies, apart from an initial analysis of blister copper, sulphuric acid and the potential sale of concentrate to Zambian smelters as an alternative to the construction of a smelter.

The Katangan section of the Central African Copperbelt is a net acid consuming area. The majority of the copper in the area is in the form of copper oxides and a leach SxEx process is utilized to produce the final product. This process is acid consuming and a number of copper producers in the region operate sulphur burning acid plants to produce sulphuric acid, while others purchase acid from Zambia or from overseas. The sulphuric acid price is rather volatile; operators in the DRC are reported as currently paying \$300/t to \$400/t and prices have been up to \$800 per tonne in previous years. It is estimated that the full production cost of producing sulphuric acid in a sulphur burning acid plant in the Katanga province of the DRC is approximately \$246/t excluding the capital cost of the sulphur burning acid plant. For the purposes of the Preliminary Economic Assessment a long term acid credit of \$250/t has been assumed.

#### *Environmental, Social and Community*

The Company conducted an environmental baseline study that analysed environmental, biological, social and cultural heritage issues. As the Kamoa Project is a sparsely inhabited greenfields project, Ivanhoe has not to date identified any significant environmental, social or community risks.

#### *Taxes, Customs and Levies*

Holders of mining rights are subject to taxes, customs and levies defined in the DRC Mining Code for all its mining activities carried out in the DRC:

##### *Income Tax*

Mining companies are subject to tax on rental income, on movable income and corporate income. Tax on movable income is levied at a rate of 20% and includes interest on loans, dividends to shareholders, allowances to directors and royalty and licence fees. Some exemptions to, and reductions in the applicable 20% rate are available including: (i) an exemption for interest paid on a loan in a foreign currency; and (ii) a reduction to 10% in the rate payable on dividends. Corporate tax is levied at 30% of income, increasing to 40% if the product is refined or smelted offshore.

Losses from operational activities may be carried forward for 5 years upon receipt of prior approval from the tax authorities. Exploration expenditure may be claimed.

Non-mining assets are depreciated in accordance with the common law. Specific mining assets dedicated to mining operations with useful lives of between 4 and 20 years are depreciated as follows:

- a) first year: 60% depreciation based on the cost of the asset; and
- b) for subsequent years: a declining-balance depreciation method is applied based on the tax years remaining over the life of the mine.

Depreciable items which are normally utilized for a period of less than 4 years or a period of more than 20 years will not qualify to use the declining balance method and will be subject to the common law provisions. The common law provides different depreciation rates for various assets (e.g. 10 years for plant and equipment). Depreciation arising in loss yielding tax periods is considered to be “deferred” and may only be set off against taxable income in future years. The deferral is not subject to any time limitation.

##### *Capital Taxes*

Real taxes consist of vehicle, real estate, mining and hydrocarbon concession areas taxes and are payable to the tax authority of the province where the owner of mining rights carries out its mining activities.

Vehicle tax is levied on all vehicles not used exclusively in the mining project area and land tax is levied on all immovable assets that fall outside of the mining or hydrocarbon concession area tax. The mining and hydrocarbon concession area taxes are calculated based on the surface area covered by the exploitation permit.

#### *Employee's Tax*

There are two types of employment tax: (i) a graduated withholding tax on all forms of employee income which varies from 3% to 50% (provided that the aggregate income tax payable by an employee, having regard to each class of remuneration, cannot exceed 30% of the total) is payable on income earned by any employee, expatriate or national; and (ii) an additional 10% tax on expatriate employees payable by the employer.

#### *Value Added Tax (VAT)*

In 2012 the DRC adopted a VAT regime; the standard VAT rate is 16% levied on all supplies of goods and services rendered and is not levied on any capital asset movements. The DRC's move to adopt a VAT is part of a continuous effort to modernize its fiscal system, with the assistance of the International Monetary Fund.

#### *Import Duties*

Mining companies are subject to import duties on all goods and products imported in accordance with a preferential customs regime. In order to benefit from this regime, the company must submit a list of the number and value of movable assets, equipment, vehicles, mineral substances and certain other items that they intend to import. The preferential rate levied is 2% and 5% of the value of the goods, respectively prior to and from the commencement of the effective exploitation of the mine, while a rate of 3% is applied to fuels, lubricants, reagents and consumables for the duration of the project. The items that are not on the preferential list are taxed at varying rates.

#### *Exchange Control*

The DRC Mining Code authorizes companies engaged in mining activities to transfer to non-residents, after payment of taxes due, amounts in respect of income and capital, including payments: (i) for goods and services to foreign suppliers; (ii) for commissions and legal fees; and (iii) in satisfaction of advances by shareholders. Expatriate employees of mining companies, who reside in the DRC are entitled to repatriate all or part of amounts due to them from the mining company without payment of fees or taxes on export.

There are no restrictions or limitations on the import of funds or on the use of proceeds from the export or sale of minerals, except for certain requirements to report transactions to the DRC government. However, mining companies are required to repatriate 40% of their export revenue to the DRC. This 40% need not be converted into DRC currency, and can be used to: (i) buy or lease imported equipment; (ii) pay for goods and services from abroad if these cannot be procured locally in identical conditions, price, quality and quantity; (iii) reimburse shareholders short-term advances provided the debt-to-equity ratio does not exceed 3:1; or (iv) pay dividends to foreign shareholders.

#### *Consumption Fees and Taxes*

Mining companies are subject to consumption and excise fees and taxes in accordance with applicable law, except for on mineral oils (i.e. fuels) for which they are exempted. The rates vary from 3% to 40%.

### *Provincial Taxes*

Katanga Province has imposed a provincial tax on mining concentrate products destined for export, of up to \$60 per tonne. This tax is in violation of the DRC Mining Code which aims to provide an exhaustive fiscal regime which exempts mining companies of any form of taxation in connection with their mining activities which could be instituted by any authority except for the federal DRC government.

### *Funding / Thin Capitalisation*

No thin capitalization rules apply in the DRC.

### *Tax Holidays*

The DRC tax legislation does not currently provide for any tax holiday incentives.

### *National Export Tax*

The fee is limited to 1% of the value of the export.

### *Provincial Export Road and Infrastructures Renovation Tax*

A provincial export tax levied on any product exported from the Katanga province by road is levied on a per tonne basis at a rate of \$50/t.

### *Withholding Taxes*

A withholding tax at the rate of 14% on services supplied by foreign companies established offshore to onshore companies applies.

### *Royalties, Levies, Charges and Other Rights Due to the State*

DRC legislation imposes several levies from both the central administration and devolved entities such as the provinces. This includes an exchange control duty levied by the DRC Central Bank equal to 0.2% on any payment to or from the DRC, except: (i) the repatriation of revenues; or (ii) transfers for the service of foreign debt.

Government royalties amount to 2% of the production of non-ferrous metals. The mining royalty is calculated on the value of sales realized, less transport, assay, insurance and marketing costs.

## **Exploration**

### *Exploration*

Considerable exploration potential exists at the Kamoia Project and an exploration program will be ongoing in 2014. Particular emphasis will be placed on investigating the expansion of known mineralized zones, both in the southern permits and on the eastern deposit boundary. The eastern boundary of the Mineral Resource Estimate, along a strike length of ~10 km, is defined solely by the current limit of drilling. Some of the best grade-widths of mineralization occur here, and high-grade bornite and chalcocite-dominant mineralization is common. Beyond these drill holes the mineralization and the deposit are untested and open to expansion.

Other exploration targets exist along strike to the south, where additional, untested copper-in-soil anomalies have been identified. While there is insufficient information to project a range of tonnage and grade for these exploration prospects, some of the area has been drill tested (4 holes) identifying thick, low-grade mineralization with similar stratigraphy to that around the Makalu dome. There is still potential over a large area, but it will require drilling to properly test these targets.

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

Access to the Kamoa Project area from Kolwezi is via unsealed roads. The road network throughout the Kamoa Project has been upgraded to provide reliable year-round drill and logistical access. The closest public airfields are at Lubumbashi (international) and at Kolwezi (domestic). Kolwezi is connected by road to Likasi and Lubumbashi. Travel time by car from Kolwezi to Lubumbashi is currently five to six hours on a combination of tarred and gravel roads, which have recently been refurbished and are in reasonable condition.

A portion of the 1,500 km-long railway line and electric power line from Lubumbashi to the Angolan town of Lobito passes approximately 10 km to the north of the Kamoa Project area. This railway line is not in a state that would permit its use by the Company without significant refurbishment. Portions of the rail line in Angola have been refurbished (Lobito to Dilolo), and other portions are expected to be upgraded in the future (Dilolo to Kolwezi).

The Kolwezi area has distinct dry (May to October) and wet (November to April) seasons. Temperatures are generally mild and vary between 17°C and 26°C, but can drop to as low as 5°C during the night in July and August. Commonly, exploration activity is halted once the wet season is underway. However, mining activities in the established mining areas at Kolwezi are operated year-round, and it would be expected that any future mining activities at the Kamoa Project would also be able to be operated on a year-round basis.

Kolwezi is a historical mining centre, which after a period of decline is being revitalized by private sector investment in the re-establishment of formerly operating mines. The workforce for any future mining activity could be sourced locally from Kolwezi. Due to its location west of Kolwezi, any future exploitation of the Kamoa Project would be a greenfields project with attendant infrastructure development requirements.

The topography of the Kamoa Project area is gently undulating with a few highlands, and with vegetation characterized by broadleaf deciduous woodland and savannas interspersed with grassland, wetlands and riparian forests. The Kamoa Project area lies at an altitude of approximately 1,430 m above sea level. There is sufficient area within the defined Kamoa Project to accommodate any future mining-related infrastructure such as plant, mine, tailings and waste rock facilities.

### **History**

The Kamoa Project represents the first discovery of a major copper deposit or district in Katanga Province since the early 1900s, and indicates the prospectivity of the Katangan section of the Central African Copperbelt for discovery of additional copper deposits.

Twentieth century exploration in the Katangan section of the Central African Copperbelt concentrated on discovery of weathered carbonate deposits that cropped out as resistant silicified hills and ridges, and which were commonly covered with yellow and lavender flowers that are specific to copper and cobalt deposits. Much of the surface expression of the DRC was mapped during the period, and deposits which cropped out at surface displaying such copper mineralization were readily recognized. Mapping had



occurred by 1908 in the Kamoa area, however the area lacked these indicators typical at other deposits in the Katangan section of the Central African Copperbelt.

During the period 1971-1975, the Tenke Fungurume Consortium, operating as the Société Internationale Des Mines du Zaïre, undertook grassroots exploration over an area that extended southwest from Kolwezi toward the Zambian border. A helicopter supported regional stream-sediment sampling program was completed in 1971. No sample location information is available for any sampling that may have occurred within the confines of the Kamoa Project.

Subsequent to the new DRC Mining Code coming into effect in 2002, Ivanhoe acquired the exploration permits that comprise the Kamoa Project in 2003, and in 2004 Ivanhoe commenced exploration activities.

The Kamoa deposit was discovered by systematic application of conventional stream sediment and soil geochemical surveys, airborne magnetic-radiometric surveys and drilling. Initial stream sediment anomalies generated in 2004 were followed up with soil sampling in 2005, which defined copper-in-soil anomalies that were drill-tested with RC drilling in 2006. After a hiatus in 2007, the encouraging RC results were followed up with core drilling in 2008, which led to the recognition of laterally extensive stratiform copper mineralization similar in style to the Polish Kupferschiefer and Zambian Ore Shale deposits. This is the first discovery of significant copper mineralization west of the Kolwezi District, which was previously thought to represent the western limit of the Katangan section of the Central African Copperbelt.

The Kamoa Project represents the first documented occurrence of a Zambian/Polish Kupferschiefer-style sediment-hosted copper deposit west of the Katangan section of the Central African Copperbelt. The discovery indicates the prospectivity of the region for discovery of additional copper deposits.

## **Geological Setting**

### *Regional Geology*

The metallogenic province of the Central African Copperbelt is hosted in metasedimentary rocks of the Neoproterozoic Katanga Supergroup, which overlie an older, composite, Proterozoic metamorphic-igneous basement. Katangan strata occur on both sides of the DRC-Zambian border and define a northerly-directed, thin-skinned thrust-and-fold orogenic system, the Lufilian Arc, which resulted from the convergence of the Congo and Kalahari cratons. The metallogenic province is divided into two distinct districts, the Zambian and Congolese (or Katangan) Copperbelts. Copper mineralization occurs at a number of stratigraphic levels within the Katangan Supergroup. In the Katangan section of the Central African Copperbelt, copper and copper-cobalt orebodies typically occur within the Mines Subgroup, a subunit of the lowermost part of the Katangan Supergroup. The orebodies are characteristically deformed and disrupted into “megafragments” up to kilometres in size. The Kolwezi and Tenke-Fungurume districts are typical examples of these types of orebodies.

### *Local and Project Geology*

The Kamoa Project lies at the western edge of the Katangan section of the Central African Copperbelt, west of the Kolwezi and Tenke-Fungurume districts. In the Kamoa Project area, the basement comprises metasedimentary rocks of Kibaran (Middle Proterozoic) age, and the Mines Subgroup units hosting mineralization at Kolwezi and Tenke-Fungurume are absent. Instead, copper mineralization is hosted within the basal portion of the Grand Conglomerat, a regionally extensive, gently dipping diamictite that underlies the majority of the Kamoa Project and surrounding area. Mineralizing fluids migrated through the permeable Roan sandstones, and copper minerals were deposited where the fluids came into contact with the carbonaceous Grand Conglomerat.

## **Mineralization**

Mineralization at the Kamoa Project has been defined over an irregularly-shaped area of 20 km x 15 km. Mineralization is typically stratiform, and vertically zoned from the base upward with chalcocite ( $\text{Cu}_2\text{S}$ ), bornite ( $\text{Cu}_5\text{FeS}_4$ ) and chalcopyrite ( $\text{CuFeS}_2$ ). There is significant pyrite mineralization above the mineralized horizon that could possibly be exploited to produce pyrite concentrates for sulphuric acid production (needed at oxide copper mines in the DRC).

The dip of the mineralized body ranges from  $0^\circ$  to  $10^\circ$  near-surface above the Kamoa dome, to  $15^\circ$  to  $25^\circ$  on the flanks of the dome. Mineralization thicknesses at a 1.0% Cu cut-off grade range from 2.4 m to 17.6 m (for Indicated Mineral Resources). The deposit has been tested locally from below surface to depths of more than 1,560 m, and remains open to the east and south.

At the current level of exploration-stage work, mineralization is expected to be laterally continuous, based on drilling to date and on Polish Kupferschiefer and Zambian Copperbelt analogues. Grade differences between drill holes at the Kamoa Project are comparable to those seen in other Copperbelt deposits, such as Konkola, Zambia, where there is a mosaic of areas several square kilometres in extent with near-constant grade, and rapid change in grade at their boundaries over a few hundred metres.

## **Exploration**

From commencement of exploration work in 2004 through to the autumn of 2011, Ivanhoe's DRC exploration was managed and performed by an independent firm, African Mining Consultants, under the supervision of Ivanhoe. Ivanhoe subsequently assumed management and operational control of the Kamoa Project.

Activities commenced with geological and geophysical data interpretation, using Landsat ETM imagery and known mineral occurrences, to define areas of interest for exploration. Geological mapping was performed at 1:150,000, 1:100,000 and 1:5,000 scales. Geochemical sampling, consisting of stream sediment and soil sampling was used to identify copper anomalies. A geophysical survey, flown in 2004, which covered an area of 7,900  $\text{km}^2$ , was used as a structural and stratigraphic mapping tool. In 2011 downhole geophysical surveys were conducted on three holes to aid geological and geotechnical studies. A ground magnetic survey has also been completed over the Kamoa area and the data have been compiled to help with geology and structure mapping.

AMEC determined that the exploration programs completed to date are appropriate for the Kamoa Project.

## **Drilling**

Ivanhoe has conducted aircore, rotary air blast, RC, and diamond-drill core drilling campaigns at the Kamoa Project since May 2006. Through to March 27, 2014, the inventory of drill holes comprise 316 aircore (7,410 m), 57 rotary air blast (9,577 m), 45 RC (4,704 m), two RC water bore (208 m), 15 RC pre-collar with core tail holes (8,820 m), 948 diamond drill core holes (225,926 m) and 110 (10,480m) close spaced wedges, primarily drilled for metallurgical samples.

Core drilling was completed by contract drill crews, typically supervised by African Mining Consultants until mid-2011 when Ivanhoe took over supervision of exploration. Hole depths ranged from a minimum of 52 m to a maximum of 1,706 m, averaging about 250 m. Core size typically commenced at a PQ size (85 mm), reducing to HQ size (63.5 mm), and where required by ground conditions reducing to NQ size (47.6 mm). Most holes were vertical or subvertical, with collar inclinations that range from  $-40^\circ$  to vertical.

AMEC considers the core recovery to be excellent, averaging 95% in the mineralized units. Down-hole surveys were performed at approximately 30 m intervals in 2009 and at 50 m intervals from 2010 to 2013 recording dip, azimuth, temperature and magnetic susceptibility at each survey depth. African Mining Consultants established standard logging and sampling conventions and codes for the Kamoa Project; drill hole logging was undertaken primarily by African Mining Consultants personnel and since late-2010, by Ivanhoe personnel. Drilling is ongoing at the Kamoa Project.

### **Sampling and Analysis**

A variety of different sampling analyses have been performed throughout the exploration program. Starting in 2010, Ivanhoe's analysis included a multi-element analysis using 4 gram subsamples of the pulp in an aqua regia digest, analysis for acid-soluble copper using a 5% sulphuric acid leach method and other procedures.

Ivanhoe has established separate sampling programs for its geochemical samples, aircore samples, RC samples and core samples. Ivanhoe is also obligated to collect "witness samples", which are mainly reference pulp samples that must be delivered to the DRC government before a sample can be exported from the DRC for analysis.

The most important sampling program relates to core holes. Prior to 2008, Ivanhoe used quarter core samples. Since that time half core samples have been used. Prior to February 2010, determination of the sample intervals took into account lithological and alteration boundaries. The entire length of core from 4 m (or one core-tray length, whichever is convenient) above the first presence of mineralization and/or the mineralized zone was sampled on nominal whole 1 m intervals to the end of the hole. Most intervals with visual estimates of greater than 0.1% Cu were sampled at 1.5 m intervals or less.

Since February 2010, the mineralized zones were sampled on 1 m intervals (dependent on geological controls). In addition, since March 2011, Ivanhoe has collected 9 m composite samples in the hanging wall, and these samples were analysed using a Niton analyser.

Prior to November 2010, sample preparation was undertaken in Kolwezi at a mobile sample preparation facility housed in two shipping containers; the facility was operated by African Mining Consultants personnel. Following November 2010, sample preparation has been conducted in a facility at the Kamoa Project site operated by African Mining Consultants personnel until the autumn of 2011, and subsequently by Ivanhoe personnel. Core samples are delivered from the core shed to the sample preparation facility by truck. Core is cut in half for sampling using a standard diamond saw. One-half core samples not sent for preparation are placed in metal trays and stored at the Kamoa Project core shed (official core storage facility). The core storage facility consists of three lockable buildings with 24 hour security personnel in place.

Since June 2005, all analyses, including drill samples, have been performed by Ultra Trace Geoanalytical Laboratory, with Genalysis acting as the check laboratory from 2005 to 2009. Commencing in 2010, ALS Chemex Laboratories (Vancouver) took over as the check laboratory. AMEC checked the database used to support the Mineral Resource Estimate for data integrity and concluded that the drillhole surveys, assays and geological data were verified to within acceptable error rates and are suitable to support the Mineral Resource estimation.

A QA/QC program comprising blank, certified reference materials, and duplicate samples was used on the Kamoa Project.

## **Security of Samples**

Sample security includes a chain-of-custody procedure that consists of filling out sample submittal forms that are sent to the laboratory with sample shipments to make certain that all samples are received by the laboratory. All diamond-drill core samples were processed by the Kolwezi facility, or the onsite Kamoia Project facility. Core samples were delivered from the core logging facility to the sample preparation facility by truck. Prepared samples are shipped to the analytical laboratory in sealed sacks that are accompanied by appropriate paperwork, including the original sample preparation request numbers and chain-of-custody forms. On arrival at the sample preparation facility, samples are checked, and then sample forms signed. Sacks are not opened until sample preparation commences. Paper records are kept for all assay and QA/QC data, geological logging and specific gravity information, and down-hole and collar coordinate surveys.

## **Metallurgical Testwork**

In 2010, metallurgical samples were taken from available drill cores and subjected to comminution and flotation tests at MINTEK Laboratories (“**Mintek**”) in Johannesburg. Although this testwork was preliminary, a circuit consisting of rougher, cleaner and scavenger flotation stages, and including targeted regrinding of intermediate streams was developed.

The Mintek work generated a 27% copper re-cleaner concentrate with a copper recovery of 79% on the master composite sample. The master composite head grade was 3.0% Cu, approximately in line with mine plan expectations at the time and close to the projected life of mine average grade of 3.24% Cu. This flowsheet was used as the starting point for a more comprehensive flotation test program that is continuing to be conducted at the Xstrata Process Support (“**XPS**”) flotation laboratory in Sudbury, Ontario.

Flotation testwork on more representative mineralized samples (based on mining expectations as described in the Preliminary Economic Assessment) was carried out at XPS on composites of hypogene and supergene material and blends of the two. The metallurgical test program to date has been successful in generating saleable and smeltable copper concentrates and has provided the basis for comminution circuit design. The flotation work has shown a consistency of outcome strongly driven by consistent liberation characteristics of the copper mineralization. All indications are that the maximum recoverable copper to concentrate with the dominant hypogene mineralization will be in the region of 85% at a final concentrate grade in the 32 to 35% range. During the first half of 2013, the focus of development work shifted towards a reduction in the silica content of the final concentrate. Adjustments were made to the reagent dosages, as well as the grinding media type, resulting in an improvement to 86.7% recovery at 37.0% copper grade for hypogene material, and 82.9% recovery at 51.4% copper grade for supergene material. Silica levels in the final concentrate also dropped from 19.1% to 13.1% for hypogene and from 26.0% to 18.1% for supergene material.

During the second half of 2013, some preliminary testwork was carried out at Mintek with the objective of simplifying and optimizing the concentrator flowsheet. Some observations from this work were taken forward into the current phase of testwork which is underway at XPS and Mintek. This phase of testwork considers the first 4 years of mining during which time flotation concentrate will be sold, and the subsequent 10 years of mining, from year 5 onwards, when the mine will be expanded and blister copper will be produced. Representative composite samples from these two mining areas were selected and are being used for this testwork. These composite samples consist of mixed as well as hypogene and supergene material.

Drilling is currently underway to collect sample for variability and mini pilot plant testwork. This testwork is expected to be carried out during the second half of 2014 and will be used for final design.

## **PLATREEF PROJECT**

### **Property Description and Location**

The Platreef Project, which includes a recently discovered underground deposit of thick PGE-nickel-copper-gold mineralization, is located in the northern limb of the Bushveld Complex approximately 11 km from Mokopane and 280 km northeast of Johannesburg, South Africa. PGE-nickel-copper-gold mineralization in the northern limb is primarily hosted within the Platreef, a mineralized sequence which is traced more than 30 km along strike. The Platreef Project is situated in the southern sector of the Platreef on three contiguous properties (or “farms”), Turfspruit, Macalacaskop, and Rietfontein, which comprise, in aggregate, approximately 10,720 ha. The northernmost property, Turfspruit, is contiguous with and along strike from Anglo Platinum Limited’s Mogalakwena group of properties and mining operations.

The Platreef Project comprises three contiguous deposits: UMT (underground Turfspruit), ATS (at Turfspruit and Rietfontein farms) and AMK (at Macalacaskop farm). The UMT deposit is further subdivided into the material within and adjacent to grade shells in the Turfspruit Cyclic Unit, the UMT-TCU deposit, and as material within and adjacent to grade shells in the Bikkuri Reef, the UMT-BIK deposit. The UMT-TCU deposit, located almost entirely on the Turfspruit farm, contains a high-grade mineralized zone, amenable to selective underground mining methods, which is the focus of the Company’s current activities at the Platreef Project. In addition to this high-grade mineralized zone amenable to selective underground mining methods there are mutual exclusive Mineral Resources amenable to mass mining methods, Mineral Resources amenable to open-pit mining methods and Bikkuri area Mineral Resources amenable to selective underground mining methods. The Company is not contemplating near-term development of these Mineral Resources amenable to mass mining, nor is it contemplating near-term development of the ATS and AMK deposits, which could be exploited by open-pit methods.

Platreef Resources, an effective 90% subsidiary of the Company, holds the right to prospect for base and precious metals on the Turfspruit and Macalacaskop properties, which comprise substantially all of the Platreef Project. The prospecting right expires on May 31, 2014. Ivanhoe filed a Mining Right Application with the DMR on June 6, 2013, and the Company is awaiting approval of the application by the DMR and environmental authorities.

Itochu, together with ITC Platinum, holds an effective 10% indirect interest in the Platreef Project, acquired in two tranches, the first 2% interest was acquired in September 2010 for \$10 million and the second 8% interest was acquired in June 2011 for \$280 million. See “*Material Contracts - Itochu Investment*”.

A near-surface portion of the ATS deposit occurs on the Rietfontein Right, which is contiguous with Turfspruit’s northeastern border. Plateau Resources, a subsidiary of Atlatsa (formerly Anooraq Resources Corporation), holds the Rietfontein Right, which is a prospecting right in respect of all minerals within the Rietfontein Right area, excluding oil, gas and precious stones, which was valid for a five-year period, and expired on November 27, 2011. Before the expiry date Plateau Resources applied for a three year renewal, which is still being processed by the DMR. Under the MPRDA a prospecting right in respect of which an application for renewal has been lodged shall, despite its stated expiry date, remain in force until such application has been granted or refused. If Atlatsa were to lose the Rietfontein

Right, the Mineral Resources amenable to open-pit methods, as declared, for Turfspruit and Rietfontein would need to be re-evaluated.

In December 2009 Ivanhoe and Atlatsa entered into the Settlement and New Project Agreement that was the culmination of an original 2001 earn-in agreement, which had gone to arbitration. The Settlement and New Project Agreement established a joint venture between Atlatsa and the Company, pursuant to which Atlatsa holds a 6% interest in any minerals obtained via open-pit mining within the Rietfontein Right and the Turfspruit prospecting right. To the extent that a Feasibility Study contemplates underground mining on the Rietfontein Right or Turfspruit prospecting right, the parties' interests will be adjusted to reflect the proportion of minerals that will be extracted from the Turfspruit property, which will be allocated to Ivanhoe, and the Rietfontein property, which will be allocated to Atlatsa. Studies to date have not reported any Mineral Resources amenable to underground mining on the Rietfontein property and therefore Mineral Resources amenable to underground mining methods are reported on a 100% basis.

Atlatsa's interest in the Platreef Project is carried by the Company, so Atlatsa has no obligation to contribute funding prior to completion of a feasibility study. Upon completion of a feasibility study, Atlatsa may either elect to retain its participating interest in such portion of the Platreef Project and contribute its pro rata share of development expenses or relinquish its interest and obtain a 5% net smelter royalty for mineral products extracted from the Rietfontein portion of the Platreef Project. For so long as Atlatsa holds an interest in the joint venture, it is entitled to appoint a member to a technical committee.

In order to give effect to the Settlement and New Project Agreement, a separate agreement will have to be entered into between Platreef Resources and Plateau Resources, the respective subsidiaries of Ivanhoe and Atlatsa which directly hold the prospecting rights. Such agreement, when concluded, will require ministerial consent in terms of section 11 and section 102 of the MPRDA.

To maintain title in good standing, Ivanhoe and/or Platreef Resources in respect of the prospecting right at the Turfspruit and Macalacaskop farms, and in the case of the Rietfontein Right, Plateau Resources, must pay the required annual prospecting fees and comply with the relevant obligations and work programs relating to its prospecting activities. As of the date of this AIF, the required payments have been made by the Company and Plateau Resources has confirmed that the required payments due have been made.

A number of permits will be required to support project development and future mining operations including, but not limited to: (i) a mining right; (ii) an approved environmental management plan; (iii) environmental authorization under the *National Environmental Management Act*, No. 107 of 1998 (South Africa); (iv) town rezoning approval; (v) an integrated water use licence; (vi) a social and labour plan; and (vii) long-term surface use lease agreements.

The mining right will be the key permit needed to commence and sustain mining operations. As a precondition to receipt of such mining right, the Company will need to comply with BEE requirements and the 2004 Mining Charter.

Mining is listed in the EIA regulations as an activity requiring an environmental authorization from the relevant provincial environmental authority. Other activities associated with mining and the Platreef Project are also listed in the EIA regulations (such as road and power line construction, waste disposal and storage of hazardous substances) and will similarly require environmental authorization from the relevant provincial environmental department.

## Mineral Resource Estimates

Ivanhoe is focusing on the Platreef Project's Mineral Resources amenable to underground selective mining methods within and adjacent to the Turfspruit Cyclic Unit ("TCU"). The Company is not contemplating near-term development of those Mineral Resources amenable to underground mass mining methods, those Mineral Resources amenable to open-pit mining methods, nor those Mineral Resources amenable to underground selective mining methods within or adjacent to grade shells in the Bikkuri Reef. There are four types of Mineral Resource defined for the Platreef Project:

- Mineral Resource that is amenable to underground selective mining methods. This consists of material within and adjacent to Grade Shells in the TCU, and is all below the 650 m elevation. This Mineral Resource has been updated using revised geological interpretation and incorporation of extensive additional drilling in Zone 1 (initial development area) and some new drilling in Zones 2 (southern sector) and 3 (western sector). The Mineral Resource amenable to selective underground mining methods is supported by the UMT-TCU model and forms the basis of Platreef PEA.
- Mineral Resource that is amenable to underground mass mining methods. In the March 31, 2011 Mineral Resource Estimate, this included the Mineral Resource amenable to underground selective mining. The resource model has not been updated, but has been trimmed so as to now be mutually exclusive from the Mineral Resource that is amenable to underground selective mining. The Mineral Resources amenable to underground mass mining are below the 650 m elevation. Within the "trimmed" Mineral Resources there has been limited additional drilling. The Mineral Resources amenable to mass underground mining is supported by the UMT-MM model, formerly referred to as the UMT bulk model.
- Mineral Resource that is amenable to open-pit mining. The model has not been updated, as there has been no new drilling. The stated Mineral Resources are unchanged and have an effective date of March 31, 2011. Mineral Resources amenable to open-pit mining are situated above the 650 m elevation.
- Bikkuri area Mineral Resources are amenable to underground selective mining methods, and consists of material within and adjacent to grade shells in the Bikkuri Reef. This Mineral Resource has been estimated using revised geological interpretations and incorporation of additional drilling in Zone 1 that intercepted the Bikkuri Reef. The Mineral Resources amenable to selective underground mining methods in the Bikkuri Reef are supported by the UMT-BIK model.

### *Underground Resource Estimates (UMT-TCU deposit)*

The UMT-TCU resource is the main focus of the Platreef Project moving forward and the UMT-TCU Mineral Resource Estimate is now considered the base case. Indicated and Inferred Mineral Resources were estimated for the UMT-TCU area. Recognition of lithological controls (TCU stratigraphy) on grade has enabled declaration of Inferred Mineral Resources at wider drill spacings than would normally be possible. Additional infill drilling in Zone 1 permitted the declaration of Indicated Mineral Resources in that portion of the Platreef Project area.

Additional drilling down-dip permitted the expansion of the Inferred Mineral Resource in the UMT-TCU portion of the deposit. Additional down-dip/lateral potential may support estimation of additional Mineral Resources with additional drilling.

Ivanhoe personnel identified nested 2PE+Au grade shells using a minimum of 3 m of 1g/t 2PE+Au, 2g/t 2PE+Au and 3g/t 2PE+Au. 2PE+Au grade shells were used rather than 3PE+Au because rhodium assaying was incomplete at the time the shells were constructed. The grade shells were constructed as a tool for constraining grade estimates. The nested grade shells were identified in two mineralized zones (T1MZ and T2MZ). The T1MZ grade shells are associated with the T1 stratigraphic unit. The T2MZ grade shells are associated with the T2 stratigraphic units (T2U and T2L). Two-dimensional gridded-seam models were completed for the T1MZ and T2MZ grade shells. Wireframe surfaces were constructed from the gridded seam models of the T1MZ and T2MZ seam models.

**Mineral Resource Statement for Mineral Resources Amenable to Underground Selective Mining Methods Within and Adjacent to the TCU; Effective Date April 4, 2013, Harry M. Parker RM.SME. and Timothy O. Kuhl, RM.SME.**

<b>Indicated Mineral Resources Tonnage and Grades</b>								
<b>Cut-off 3PE+Au</b>	<b>Mt</b>	<b>Pt (g/t)</b>	<b>Pd (g/t)</b>	<b>Au (g/t)</b>	<b>Rh (g/t)</b>	<b>3PE+Au (g/t)</b>	<b>Ni (%)</b>	<b>Cu (%)</b>
3 g/t	137	2.27	2.31	0.35	0.15	5.09	0.38	0.18
2 g/t	214	1.83	1.89	0.29	0.12	4.13	0.34	0.17
1 g/t	387	1.28	1.34	0.21	0.09	2.92	0.28	0.14
<b>Contained Metal</b>								
<b>Cut-off 3PE+Au</b>	<b>–</b>	<b>Pt (Moz)</b>	<b>Pd (Moz)</b>	<b>Au (Moz)</b>	<b>Rh (Moz)</b>	<b>3PE+Au (Moz)</b>	<b>Ni (Mlbs)</b>	<b>Cu (Mlbs)</b>
3 g/t	–	10.0	10.2	1.53	0.67	22.4	1,133	558
2 g/t	–	12.6	13.0	2.00	0.85	28.5	1,610	794
1 g/t	–	15.9	16.7	2.67	1.09	36.3	2,408	1,189
<b>Inferred Mineral Resources Tonnage and Grades</b>								
<b>Cut-off 3PE+Au</b>	<b>Mt</b>	<b>Pt (g/t)</b>	<b>Pd (g/t)</b>	<b>Au (g/t)</b>	<b>Rh (g/t)</b>	<b>3PE+Au (g/t)</b>	<b>Ni (%)</b>	<b>Cu (%)</b>
3 g/t	211	2.09	2.06	0.34	0.14	4.63	0.38	0.18
2 g/t	415	1.57	1.59	0.27	0.11	3.54	0.33	0.16
1 g/t	1,054	0.96	1.02	0.18	0.07	2.23	0.26	0.13
<b>Contained Metal</b>								
<b>Cut-off 3PE+Au</b>	<b>–</b>	<b>Pt (Moz)</b>	<b>Pd (Moz)</b>	<b>Au (Moz)</b>	<b>Rh (Moz)</b>	<b>3PE+Au (Moz)</b>	<b>Ni (Mlbs)</b>	<b>Cu (Mlbs)</b>
3 g/t	–	14.2	14.0	2.29	0.97	31.5	1,764	855
2 g/t	–	20.9	21.3	3.58	1.44	47.2	3,032	1,490
1 g/t	–	32.7	34.7	5.95	2.32	75.7	5,934	3,035

**Notes:**

1. Mineral Resources have an effective date of 3 April 2013. The Qualified Persons for the estimate are Dr Harry Parker, RM SME, and Mr Timothy Kuhl, RM SME.
2. Mineral Resources estimated assuming underground selective mining methods within and adjacent to the TCU are exclusive of the Mineral Resources estimated assuming mass-mining methods. The 2 g/t 3PE+Au cut-off is considered the base case estimate. (Highlighted); the 3 g/t 3PE+Au cut-off is also being considered.
3. Mineral Resources are reported on a 100% basis. Mineral Resources are stated from approximately -200 m to 650 m elevation (from -500 m to 1,350 m depth). Indicated Mineral Resources are drilled on approximately 100 x 100 m spacing; Inferred Mineral



Resources are drilled on 400 m x 400 m (locally to 400 m x 200 m and 200 m x 200 m) spacing.

4. Reasonable prospects for economic extraction were determined using the following assumptions. Assumed commodity prices are Ni: \$8.81/lb, Cu: \$2.73/lb, Pt: \$1,699/oz, Pd: \$667/oz, Au: \$1,315/oz, and Rh: \$2,065/oz. It has been assumed that payable metals would be 82% from smelter/refinery and that mining costs (average \$40/t) and process, G&A, and concentrate transport costs (average \$12.50/t of mill feed for a 4 Mtpa operation) would be covered. The process recoveries vary with block grade but typically would be 85–90% for Pt, Pd and Rh; 75% for Au and 70% for Ni and 85% for Cu.
5. Totals may not sum due to rounding.

#### *Underground Resource Estimates (UMT-MM deposit)*

The Company has identified Inferred Mineral Resources amenable to mass mining methods. This UMT-MM resource is not the main focus of the Platreef Project moving forward, nor is it the basis of the Platreef PEA. The estimates of Inferred Mineral Resources amenable to mass mining methods, amounted to 1,870 Mt, grading 0.98 g/t 2PE+Au (0.40 g/t Pt, 0.49 g/t Pd, 0.09 g/t Au), 0.21% Ni and 0.13% Cu. This Mineral Resource Estimate has an effective date of March 13, 2013. The Qualified Persons are Harry M. Parker, R.M. SME. and Timothy O. Kuhl, R.M. SME. Mineral Resources are stated from 650 m elevation downward to approximately -400 m elevation. The cut-off grade (0.15% Ni) assumes commodity prices of Ni: \$8.81/lb, Cu: \$2.73/lb, Pt: \$1,699/oz, Pd: \$667/oz, Au: \$1,315/oz. It has been assumed that payable metals would be 82% from smelter/refinery and that a mix of block cave and sub-level mining costs (averaging \$20/t, and ranging from \$9/t to \$35/t), and process, G&A, and concentrate transport costs (average of \$12/t) would be covered for a conceptual 10 Mtpa operation. Process recoveries are taken from metal-specific equations for serpentinite. Nickel is presented as an example where nickel recovery =  $((9.3 * \ln(\text{Ni head grade}) + 84.9))$ . Mineral Resources at the 0.15% Ni cut-off grade occur in continuous zones; there are a relatively minor number of blocks inside these zones that are below cut-off and have been excluded. Inferred Mineral Resources are based on an area drilled on approximately 400 m x 400 m (locally 400 m x 200 m and 200 m x 200 m) spacing. Totals may not sum due to rounding. The reported Mineral Resources amenable to mass mining methods are reported on a 100% basis and do not take into account any interests of the Company's joint venture partners

#### *Mineral Resources Amenable to Open-pit Mining (ATS and AMK)*

Ivanhoe has identified Mineral Resources amenable to open-pit mining at the ATS and AMK deposits, which are not the main focus of the Platreef Project moving forward, nor are they the basis of the Platreef PEA. The estimates amounted to 520 Mt of Indicated Mineral Resources grading 0.86 g/t 2PE+Au (0.33 g/t Pt, 0.44 g/t Pd, 0.09 g/t Au), 0.20% sulphide Ni and 0.14% sulphide Cu, and 510 Mt of Inferred Mineral Resources grading 1.07 g/t 2PE+Au (0.46 g/t Pt, 0.51 g/t Pd, 0.10 g/t Au), 0.16% sulphide Ni and 0.1% sulphide Cu, all at a cut-off grade of 0.1% sulphide Ni. This Mineral Resource Estimate has an effective date of March 31, 2011. The Qualified Persons are Harry M. Parker, R.M. SME. and Timothy O. Kuhl, R.M. SME. Mineral Resources are stated from 650 m elevation to surface (approximately 500 m depth extent). A selective mining unit of 15 m x 15 m x 10 m has been assumed and external dilution has not been applied. At a 0.1% sulphide Ni cut-off grade, the mineralization is continuous and based on assumed costs and metal prices. Commodity prices were assumed to be Ni: \$9.20/lb, Cu: \$3.00/lb, Pt: \$1,785/oz, Pd: \$650/oz, Au: \$1,265/oz. Process, general and administrative and concentrate transport costs are estimated to average \$11/t for a conceptual 10 Mtpa operation. Mining costs are estimated at an average of \$5/t. Indicated Mineral Resources are based on an area drilled on approximately 75 m x 100 m spacings. Inferred Mineral Resources are based on an area drilled on approximately 120 m x 140 m spacings. Totals may not sum due to rounding. The reported Mineral Resources amenable to open-pit mining methods are reported on 100% basis and do not take into account any interests of the Company's joint venture partners.

*Bikkuri Reef Mineral Resources within and adjacent to grade shells assuming selective underground mining methods (UMT-BIK)*

Ivanhoe has identified Mineral Resources for the Bikkuri area that are amenable to underground selective mining methods, and consists of material within and adjacent to grade shells in the Bikkuri Reef. This UMT-BIK resource is not the main focus of the Platreef Project moving forward, nor is it the basis of the Platreef PEA. The estimates amounted to 5.6 Mt of Indicated Mineral Resources grading 2.92 g/t 3PE+Au (1.34 g/t Pt, 1.20 g/t Pd, 0.08 g/t Rh, 0.30 g/t Au), 0.36% Ni and 0.20% Cu, and 2.3 Mt of Inferred Mineral Resources grading 2.84 g/t 3PE+Au (1.30 g/t Pt, 1.16 g/t Pd, 0.07 g/t Rh, 0.31 g/t Au), 0.34% Ni and 0.18% Cu, all within a 2 g/t 2PE+Au grade shell. This Mineral Resource Estimate has an effective date of May 8, 2013. The Qualified Persons are Harry M. Parker, R.M. SME. and Timothy O. Kuhl, R.M. SME. Mineral Resources are stated from approximately 400 m to 800 m elevation. Indicated Mineral Resources are drilled on approximately 100 x 100 m spacing; Inferred Mineral Resources are drilled on 400 m x 400 m (locally to 400 m x 200 m and 200 m x 200 m) spacing. Mineral Resources estimated assuming underground selective mining methods for the Bikkuri Reef are exclusive of the Mineral Resources estimated assuming mass-mining methods and the Mineral Resources estimated within and adjacent to the TCU. Commodity prices were assumed to be Ni: \$8.81/lb, Cu: \$2.73/lb, Pt: \$1,699/oz, Pd: \$667/oz, Au: \$1,315/oz, Rh: \$2,065/oz. It has been assumed that payable metals would be 82% from smelter/refinery and that mining costs (average \$40/t) and process, G&A, and concentrate transport costs (average \$12.50/t of mill feed for a 4 Mtpa operation) would be covered. The process recoveries vary with block grade but typically would be 85–90% for Pt, Pd and Rh; 75% for Au and 70% for Ni and 85% for Cu. No allowances for mining recovery and external dilution have been applied. Totals may not sum due to rounding. The reported Bikkuri Reef Mineral Resources amenable to underground selective mining methods, and consisting of material within and adjacent to grade shells in the Bikkuri Reef are reported on 100% basis and do not take into account any interests of the Company's joint venture partners.

**Targets for Additional Exploration**

Beyond the current Mineral Resources, mineralization is open to expansion to the south and west. Two exploration targets have been identified.

Target 1, the Ga-Madiba extension zone, is based on results from 14 wide-spaced, step-out drill holes completed between October 26, 2012, and February 18, 2014. Ga-Madiba, which adjoins and stretches to the south from the area where Inferred Mineral Resources are estimated, could contain 115 to 235 million tonnes grading 3.1 to 4.5 g/t 3PE+Au (comprising 1.2 to 1.7 g/t Pt, 1.7 to 2.3 g/t Pd, 0.06 to 0.14 g/t Rh, 0.17 to 0.26 g/t Au), 0.23% to 0.28% Ni and 0.11% to 0.14% Cu over an area of 3.7 km<sup>2</sup>. The tonnage and grade ranges are based on intersections of 2.0 g/t 3PE+Au mineralization in drill holes completed in Target 1.

Drilling to date has successfully identified the T1 and T2 mineralized reefs and confirmed the initial interpretation that the Ga-Madiba target represents the southern strike extension to the shallow-lying Flatreef.

Target 2, which surrounds the currently estimated Mineral Resources in Zones 1 and 2, could contain an estimated 260 to 450 million tonnes grading 3.4 to 4.5 g/t 3PE+Au (comprising 1.7 to 2.4 g/t Pt, 1.2 to 1.6 g/t Pd, 0.14 to 0.20 g/t Rh, 0.26 to 0.33 g/t Au), 0.30% to 0.35% Ni and 0.15% to 0.18% Cu over an area of 7.6 km<sup>2</sup>. The tonnage and grade ranges are based on 2.0 g/t 3PE+Au intersections of mineralization in 19 wide-spaced drill holes completed in Target 2 and adjacent drill holes within the Inferred Mineral Resource area. These drill holes were completed between October 26, 2012, and February 18, 2014.

*The potential quantity and grade of these exploration targets is conceptual in nature. There has been insufficient exploration and/or study to define these exploration targets as a Mineral Resource. It is uncertain if additional exploration will result in these exploration targets being delineated as a Mineral Resource.*

In addition, there are approximately 37 km<sup>2</sup> of unexplored ground beyond these two exploration target areas on the property under which the Platreef mineralization is projected to lie. It is not possible to estimate a range of tonnages and grades for this ground. There is excellent potential for mineralization to significantly increase with further step-out drilling to the south-west.

### **Preliminary Economics**

In March 2014, Ivanhoe issued a Preliminary Economic Assessment of the Platreef Project, which analyzes part of the Mineral Resource amenable to underground selective mining methods within and adjacent to the TCU mineralized zones.

The Platreef PEA considers three phases of potential development for an underground mine and the concentrator processing facility:

- Phase 1 - 4 Mtpa mine and concentrator;
- Phase 2 - 8 Mtpa mine and concentrator (base case); and
- Phase 3 - 12 Mtpa mine and concentrator.

The base case for the Platreef PEA analysis is the 8 Mtpa production scenario. The three scenarios reflects a staged approach to the development of the Platreef Project, where there is opportunity to expand the operation depending on demand, smelting and refining capacity and capital availability. As the first phase is developed and taken into production there is the opportunity to modify and optimize the subsequent phases. Opportunities for additional expansion beyond Phase 3 may be available, but require additional investigation.

The initial phase of the Platreef Project includes the construction of a concentrator and other associated infrastructure to support a start-up to production at a nominal plant capacity of 4 Mtpa by 2020. Phase 2 includes an additional ramp-up to a plant capacity of 8 Mtpa by 2024. Phase 3 envisages a further ramp-up to a plant capacity of 12 Mtpa by 2028. All production would be sourced from underground mining, with the planned rate of mine production optimized to match the capacity of the concentrator processing facility, including the progressive expansion of such processing capacity. Concentrate produced would then be sold or toll-treated at local smelters. The options for a smelter and/or base metal refinery are still being studied and their timing and sizing need to undergo further analysis.

Assuming long term commodity prices of \$8.35/lb nickel, \$1,700/oz platinum, \$820/oz palladium, \$1,300/oz gold, \$3.00/lb copper and \$1,700/oz rhodium and a South African Rand to U.S. dollar exchange rate of 10:1, the economic analysis returns an after tax net present value at an 8% discount rate of \$0.90 billion (for Phase 1), \$1.62 billion (for Phase 2) and \$2.18 billion (Phase 3). The after tax internal rate of return is 13.4% (for Phase 1), 14.3% (for Phase 2) and 14.9% (for Phase 3) and provides a payback period of 5.6 years (for Phase 1), 6.4 years (for Phase 2) and 7.5 years (for Phase 3). The life-of-mine average total cash cost, after credits, is \$367/oz 3PE+Au (for Phase 1), \$341/oz 3PE+Au (for Phase 2) and \$371/oz 3PE+Au (for Phase 3).

*Readers are cautioned that this Preliminary Economic Assessment is preliminary in nature as it includes Inferred Mineral Resources which are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as Mineral Reserves. There is*

*no certainty that the projected results will be realized. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.*

The Platreef PEA's after tax financial results are set out in the table below.

		<b>Phase 1 4 Mtpa</b>	<b>Phase 2 8 Mtpa</b>	<b>Phase 3 12 Mtpa</b>
<b>Net Present Value (US\$M)</b>	<b>8%</b>	<b>897</b>	<b>1,620</b>	<b>2,179</b>
<b>IRR</b>		<b>13.37%</b>	<b>14.34%</b>	<b>14.88%</b>
<b>Project Payback Period</b>	<b>(Years)</b>	<b>5.59</b>	<b>6.40</b>	<b>7.55</b>

The following table sets out the average annual production results over the 30 year mine life for each of the development scenarios.

<b>Life of Mine Average Production Summary</b>				
		<b>Phase 1 4 Mtpa</b>	<b>Phase 2 8 Mtpa</b>	<b>Phase 3 12 Mtpa</b>
<b>Total Mined and Processed (30 years)</b>	<b>Mt</b>	<b>117</b>	<b>219</b>	<b>310</b>
Nickel	%	0.34	0.35	0.34
Platinum	g/t	1.84	1.70	1.71
Palladium	g/t	1.93	1.78	1.77
Copper	%	0.16	0.16	0.16
Gold	g/t	0.27	0.27	0.27
Rhodium	g/t	0.13	0.12	0.12
<b>Recoveries (Life of Mine Average)</b>				
Nickel Recovery	%	69.13	69.47	69.05
Platinum Recovery	%	88.21	87.15	87.24
Palladium Recovery	%	87.63	86.85	86.77
Copper Recovery	%	87.89	87.90	87.84
Gold Recovery	%	76.69	76.72	76.72
Rhodium Recovery	%	85.92	86.62	86.62
<b>Concentrate Produced (Life of Mine Average Annual Production)</b>				
Concentrate	ktpa	156	292	413
Nickel	%	5.8	6.0	5.8
Platinum	g/t	40.5	37.0	37.3
Palladium	g/t	42.4	38.7	38.4
Copper	%	3.6	3.6	3.5
Gold	g/t	5.3	5.2	5.2
Rhodium	g/t	2.8	2.6	2.6
3PE + Au	g/t	90.9	83.6	83.5
<b>Metal Sold (Life of Mine Average Annual Production Metal Units per Year)</b>				
Nickel	Mlb	20	39	53

Platinum	koz	203	348	495
Palladium	koz	212	364	510
Copper	Mlb	12	23	32
Gold	koz	26	49	69
Rhodium	koz	14	25	35
3PE + Au	koz	455	785	1,109

The following table sets out the estimated life of mine average operating costs for each of the development scenarios.

	Phase 1 4 Mtpa	Phase 2 8 Mtpa	Phase 3 12 Mtpa
	US\$/oz Payable 3PE+Au		
Mine Site Cash Cost	412	425	441
Realization Cost	402	416	413
<b>Total Cash Costs Before Credits</b>	<b>814</b>	<b>840</b>	<b>854</b>
Nickel Credits	-367	-411	-397
Copper Credits	-81	-89	-86
<b>Total Cash Costs After Credits</b>	<b>367</b>	<b>341</b>	<b>371</b>

### *Mining*

The Platreef PEA evaluates three different production-rate scenarios (4 Mtpa, 8 Mtpa and 12 Mtpa), to mine a portion of the UMT-TCU Indicated and Inferred Mineral Resources at the Platreef Project. The mining methods considered are long-hole stoping and drift-and-fill extraction, followed by either cemented paste, cemented rock fill or waste rock backfill, where applicable. The long-hole stoping mining method would be used for mining the thicker portions of the resource zones. A minimum mineable thickness of 18 m is used to identify potentially mineable long-hole stoping resources. The drift-and-fill stoping method has been assumed for mining resource zones thinner than 18 m. A minimum mining thickness of 4 m has also been applied to the resource in these areas, which allows the use of suitably sized mechanized mining equipment.

The mine plans have been developed for a total project life of 36 years, including a six-year pre-production period prior to the mill start-up (for a total mine life of 30 years, after mill start-up). Mining zones included in the mine plans occur at depths below surface ranging from approximately 500 m to 1,600 m. Access to the mine would be via multiple vertical shafts. Mining is planned to be performed using highly productive mechanized methods, with paste backfill to be utilized to fill open stopes.

### *Processing*

All mined material would be hoisted to the surface via the production shafts and then transported via overland conveyor to the crushing plant. Phase 1 includes the construction of a 4 Mtpa concentrator and other associated infrastructure by 2020, in two modules of 2 Mtpa. Phase 2 includes a ramp-up to 8 Mtpa by 2024, and Phase 3 a further ramp-up to a plant capacity of 12 Mtpa by 2028.

The selected Phase 1 flowsheet is comprised of a common 3-stage crushing circuit, feeding crushed material to two milling-flotation modules, each of 2 Mtpa capacity. Milling is achieved in a ball mill with classification and rougher flotation in a split high, medium and low grade circuit. Each concentrate is cleaned in a dedicated cleaner circuit with varying stages and recycles. Flotation is followed by tailings handling and concentrate thickening, filtration and storage.

### *Infrastructure, Capital and Operating Costs*

#### *Infrastructure*

While the Platreef Project is a greenfield project, it is located in South Africa, which is a well-established mining jurisdiction. As such, in addition to mine development and processing infrastructure, Ivanhoe may need to contribute to the development of power, water and other ancillary infrastructure.

South Africa is a country of relatively low rainfall and, in particular, the Limpopo province, where the Platreef Project is located, will require significant additional water capacity to meet the growing demand from the mining, domestic and agricultural sectors.

The Olifants River Water Resource Development Project is designed to deliver water to the Eastern and northern limbs of the Bushveld Complex. The project consists of the new De Hoop Dam, the raising of the wall of the Flag Boshielo Dam and related pipeline infrastructure that ultimately will deliver water to Pruissen, southeast of Mokopane and the Platreef Project. The Pruissen Pipeline Project will be developed to deliver water on from Pruissen to the communities and mining projects on the northern limb. Ivanhoe is a member of the Joint Water Forum, which is part of the Olifants River Water Resource Development Project.

Participants in the water development scheme are required to indicate their water requirements so that total water demand may be calculated relative to the scheme's capacity. These requirements are translated into a non-binding memorandum of agreement and then a binding, off-take agreement. The Platreef Project's water requirement for the 8 Mtpa base case scenario would be approximately 22 million litres per day.

Eskom, South Africa's national power authority, has advised that sufficient power is not presently available in the Mokopane area due to transmission-line limitations and generating shortfalls. The generating shortfall should be alleviated with the first unit of the new Medupi Power Station due to begin operation in Q4 2014. When completed, the Medupi Power Station will have six boilers, each powering an 800-megawatt turbine, and produce a total of 4,800 megawatts of power for the national grid.

The Medupi Power Station output, combined with the new Borutho main transmission substation, which is approximately 26 kilometres from the Platreef Project and is due to begin operation this year, should ensure that sufficient power will be available for the Platreef Project.

Ivanhoe will also need to consider logistics and transportation infrastructure as the N11 National Highway, which connects Mokopane to the South Africa/Botswana border, currently runs directly through the Turfspruit and Macalacaskop farms, and serves the operating Anglo Platinum Mogalakwena Mine. A study was completed in 2009 in respect of the proposed re-routing of approximately 18.4 km of the N11. The realignment route will bypass the Turfspruit and Macalacaskop farms, but will bisect the Rietfontein farm, and therefore has been considered in the possible tailings storage facility footprint.

### *Capital and Operating Costs*

Ivanhoe estimates that capital costs for the initial development of mining operations, concentrator and ancillary on-site facilities, including contingency, will amount to approximately \$1.5 billion (for Phase 1), \$1.7 billion (for Phase 2) and \$1.8 billion (for Phase 3). These are the total capital costs prior to commencement of production in 2020 (for each of Phase 1, Phase 2 and Phase 3).

#### **Pre-production Capital Cost**

	<b>Phase 1 4 Mtpa</b>	<b>Phase 2 8 Mtpa</b>	<b>Phase 3 12 Mtpa</b>
	<b>US\$M</b>	<b>US\$M</b>	<b>US\$M</b>
<b>Mining</b>			
<b>Underground</b>	<b>540</b>	<b>633</b>	<b>673</b>
<b>Capitalized Pre-Production</b>	<b>24</b>	<b>24</b>	<b>25</b>
<b>Subtotal</b>	<b>564</b>	<b>657</b>	<b>698</b>
<b>Processing</b>			
<b>Concentrator</b>	<b>201</b>	<b>201</b>	<b>201</b>
<b>Subtotal</b>	<b>201</b>	<b>201</b>	<b>201</b>
<b>Infrastructure</b>			
<b>Bulk Water/Power</b>	<b>76</b>	<b>76</b>	<b>76</b>
<b>Tailings Dam</b>	<b>39</b>	<b>46</b>	<b>39</b>
<b>General Infrastructure</b>	<b>29</b>	<b>29</b>	<b>29</b>
<b>Subtotal</b>	<b>144</b>	<b>151</b>	<b>144</b>
<b>Indirects</b>			
<b>Drilling &amp; Studies</b>	<b>–</b>	<b>19</b>	<b>19</b>
<b>Mining: Indirects</b>	<b>55</b>	<b>58</b>	<b>58</b>
<b>Mining: EPCM</b>	<b>80</b>	<b>93</b>	<b>97</b>
<b>Processing &amp; Infrastructure: EPCM</b>	<b>37</b>	<b>37</b>	<b>37</b>
<b>Subtotal</b>	<b>172</b>	<b>207</b>	<b>211</b>
<b>Owners Cost</b>			
<b>Capitalized G&amp;A</b>	<b>26</b>	<b>26</b>	<b>26</b>
<b>Mining</b>	<b>60</b>	<b>79</b>	<b>79</b>
<b>Processing &amp; Infrastructure</b>	<b>17</b>	<b>18</b>	<b>17</b>
<b>Subtotal</b>	<b>103</b>	<b>123</b>	<b>122</b>
<b>Capital Expenditure Before Contingency</b>	<b>1,185</b>	<b>1,338</b>	<b>1,376</b>
<b>Mining Contingency</b>	<b>221</b>	<b>259</b>	<b>272</b>
<b>Processing &amp; Infrastructure Contingency</b>	<b>120</b>	<b>122</b>	<b>120</b>
<b>Capital Expenditure After Contingency</b>	<b>1,525</b>	<b>1,719</b>	<b>1,769</b>

Expansion and sustaining capital expenditure, including ongoing underground mining development and in the case of Phase 2 and Phase 3 the cost of expanding mining operations, the concentrator and other ancillary infrastructure and facilities to accommodate production of 8 Mtpa and 12 Mtpa, respectively, is estimated to be an additional \$1.0 billion (for Phase 1), \$2.5 billion (for Phase 2) and \$4.1 billion (for Phase 3), after 2020, spread over the 30 year mine life.

### Sustaining and Expansion Capital Cost

	<b>Phase 1 4 Mtpa</b>	<b>Phase 2 8 Mtpa</b>	<b>Phase 3 12 Mtpa</b>
	<b>US\$M</b>	<b>US\$M</b>	<b>US\$M</b>
<b>Mining</b>			
Underground	679	1,524	2,347
<b>Subtotal</b>	<b>679</b>	<b>1,524</b>	<b>2,347</b>
<b>Processing</b>			
Concentrator	103	383	652
<b>Subtotal</b>	<b>103</b>	<b>383</b>	<b>652</b>
<b>Infrastructure</b>			
Bulk Water/Power	8	49	90
Tailings Dam	—	3	49
General Infrastructure	3	3	3
Closure Costs	14	19	30
<b>Subtotal</b>	<b>26</b>	<b>75</b>	<b>173</b>
<b>Indirects</b>			
Drilling & Studies	—	—	19
Processing & Infrastructure: EPCM	4	33	63
<b>Subtotal</b>	<b>4</b>	<b>33</b>	<b>81</b>
<b>Owners Cost</b>			
Processing & Infrastructure	2	14	29
<b>Subtotal</b>	<b>2</b>	<b>14</b>	<b>29</b>
<b>Capital Expenditure Before Contingency</b>	<b>814</b>	<b>2,029</b>	<b>3,282</b>
Mining Contingency	124	354	572
Processing & Infrastructure Contingency	36	146	266
<b>Capital Expenditure After Contingency</b>	<b>974</b>	<b>2,528</b>	<b>4,120</b>

Operating costs include estimates for underground mining, processing, general and administrative expenses, transport, refining and other realization costs. The total cash cost, after credits, is estimated to be \$367 per payable ounce of 3PE+Au (for Phase 1), \$341 per payable ounce of 3PE+Au (for Phase 2) and \$371 per payable ounce of 3PE+Au (for Phase 3) on average over the life of the mine.

### Sensitivity Analysis

The Platreef Project's various development scenarios return net present values (after tax) of \$0.9 billion (for Phase 1), \$1.6 billion (for Phase 2) and \$2.2 billion (for Phase 3), assuming long term commodity prices and a South African Rand to U.S. dollar exchange rate of 10:1, at an 8% discount rate. The after tax internal rate of return is 13.4% (for Phase 1), 14.3% (for Phase 2) and 14.9% (for Phase 3) and the payback period of 5.6 years (for Phase 1), 6.4 years (for Phase 2) and 7.5 years (for Phase 3). Set forth



below is a summary of these amounts as well as net present values (after tax) at alternative discount rates:

		<b>Phase 1 4 Mtpa</b>	<b>Phase 2 8 Mtpa</b>	<b>Phase 3 12 Mtpa</b>
Net Present Value (US\$M)	Undiscounted	6,992	12,527	17,078
	5%	2,040	3,593	4,818
	<b>8%</b>	<b>897</b>	<b>1,620</b>	<b>2,179</b>
	10%	449	868	1,193
<b>IRR</b>		<b>13.37%</b>	<b>14.34%</b>	<b>14.88%</b>
<b>Project Payback Period</b>	<b>(Years)</b>	<b>5.59</b>	<b>6.40</b>	<b>7.55</b>

Cash flow sensitivity to commodity price variation is show in the table below, for platinum prices from \$1,400/oz to \$2,000/oz and for nickel prices from \$6.85/lb to \$9.85/lb.

<b>Phase 1 - Net Present Value, at 8% \$M</b>	<b>Platinum Price - US\$ / oz</b>				
<b>Nickel Price - US\$ / lb</b>	<b>1,400</b>	<b>1,600</b>	<b>1,700</b>	<b>1,800</b>	<b>2,000</b>
6.85	521	689	773	857	1,026
7.85	603	771	856	940	1,108
8.35	644	813	897	981	1,149
8.85	685	854	938	1,023	1,190
9.85	768	937	1,021	1,105	1,272

<b>Phase 2 - Net Present Value, at 8% \$M</b>	<b>Platinum Price - US\$ / oz</b>				
<b>Nickel Price - US\$ / lb</b>	<b>1,400</b>	<b>1,600</b>	<b>1,700</b>	<b>1,800</b>	<b>2,000</b>
6.85	1,000	1,265	1,397	1,530	1,794
7.85	1,148	1,413	1,546	1,678	1,940
8.35	1,222	1,487	1,620	1,751	2,014
8.85	1,297	1,561	1,694	1,825	2,087
9.85	1,445	1,709	1,841	1,972	2,234

<b>Phase 3 - Net Present Value, at 8% \$M</b>	<b>Platinum Price - US\$ / oz</b>				
<b>Nickel Price - US\$ / lb</b>	<b>1,400</b>	<b>1,600</b>	<b>1,700</b>	<b>1,800</b>	<b>2,000</b>
6.85	1,370	1,722	1,897	2,072	2,422
7.85	1,559	1,910	2,085	2,260	2,609
8.35	1,654	2,004	2,179	2,354	2,702
8.85	1,748	2,098	2,273	2,448	2,795
9.85	1,936	2,286	2,460	2,634	2,982

### *Markets and Contracts*

Ivanhoe plans a phased expansion of the Platreef Project, with Phase 1 (4 Mtpa) producing approximately 150 ktpa of concentrate, including 9 ktpa of nickel, followed by Phase 2 (8 Mtpa) and Phase 3 (12 Mtpa).

The marketing assumptions in the Platreef PEA are based on a marketing study on the sale of concentrates, furnace mattes, converter mattes and PGM concentrates in 2013. Whilst there is sufficient furnace capacity in South Africa, the converting and sulphur removal capacity is constrained by environmental sulphur emissions permits. There is some available converting and acid plant capacity, but the high iron and sulphur levels in the Platreef Project concentrates will likely fill this capacity quickly, and additional capital expenditure would then be required. The marketing study concluded that nickel refining capacity could accommodate Phase 2 of the Platreef Project development plan, for an expansion from 9 ktpa to 18 ktpa of nickel production. However, this is dependent on successful negotiations between Ivanhoe and the smelters and refiners, and solving the environmental (sulphur emissions) issues. Finally, the availability of excess capacity required for Phase 2 of the Platreef Project is largely dependent on the state of the PGM industry in 2024 (the current estimate for the start of Phase 2).

### *Environment, Social and Community*

The Platreef Project is located approximately 10 km from the town of Mokopane. Furthermore, there are several communities situated within the proposed project area that may be affected by the Platreef Project.

Baseline studies have been undertaken within the Platreef Project area, in support of an environmental and social impact assessment and environmental management plan which are part of the mining right application that was submitted in June 2013. The environmental management plan addressed environmental matters, as well as cultural heritage and social baseline analysis, and included in its social analysis a census of local communities, analysis of land claim status and any required resettlement planning.

### *Taxes Customs and Levies*

#### *Income Tax*

Companies resident in South Africa pay income tax on their worldwide income while non-residents are only taxed on South African sourced income (subject to the provisions of any double taxation agreements). Companies mining minerals such as PGEs, diamonds, coal, limestone and other base metals are currently subject an income tax rate of 28%, however special rates of income tax are laid down for companies mining gold or deriving income from refining oil. Corporate tax is paid on all income, less deductible operating expenditure and a capital expenditure allowance.

Assessed losses may be carried forward indefinitely and be used to offset taxable income in future years, as long as the company continues to trade. If the company does not carry on trade in any one year, it loses the right to carry forward these losses. There is no mechanism for carrying back losses, nor for sharing losses with other South African group companies

The South African income tax act provides that certain capital expenditure may be deducted from the income of mining operations but only to the extent that a mining company has reached the production stage. To the extent that a company is not deriving income from mining operations or from working a

mine, no portion of the capital expenditure incurred during a year of assessment may be deducted. The capital expenditure incurred must be accumulated from year to year until production commences and income from mining operations is derived.

The South African Mineral and Petroleum Resources Royalty Act of 2008 came into effect on March 1, 2010. Under the Act, royalties are payable by operators using a prescribed formula by means of a ratio of earnings before interest and taxes (EBIT or profit) to gross sales of mineral resources; such royalties are, however, capped within a range.

The royalty rate for refined minerals is a percentage determined as:

Royalty % =  $0.5 + [\text{EBIT}/(\text{Gross Sales} * 12.5)] * 100$ , with a maximum of 5%, for production of refined minerals.

#### *Capital Gains Tax*

South Africa imposes a tax on capital gains in which 66.6% of any aggregate taxable capital gain is included in the taxable income of the company and subject to tax at the normal company rate of 28%.

#### *Dividends*

On April 1, 2012, South Africa imposed a 15% conventional withholding tax on dividends paid to certain residents and all non-resident shareholders. Dividends paid by one South African resident company to a beneficial owner which is another South African resident company are exempt from the tax.

#### *Value-added Tax (VAT)*

VAT is assessed on most goods and services at 14% although certain goods and services are zero-rated or exempt from VAT. Supplies of goods disposed of as export sales from South Africa would normally be zero rated.

#### *Thin Capitalization Restrictions*

South African companies which are wholly or partially owned by a foreign shareholder are required to maintain acceptable debt to equity ratios. These ratios are not specifically enumerated but instead are based on certain subjective tests. Failure to maintain an appropriate ratio will result in interest payable by the South African entity on any shareholder loans not being fully deductible.

#### *Exchange Control Regulations*

South Africa has in place a system of exchange controls which restrict certain forms of investment by non-residents. Such restrictions include limits on: (i) loans advanced by non-residents to residents (including in relation to the interest rate that non-residents may charge and certain other terms of such loans (i.e. repayment periods)), which restrictions differ depending on whether the lender is a shareholder or a third party and whether the loan is denominated in Rand or another currency; and (ii) the amounts which a South African company, which is more than 75% owned by a non-resident, may borrow locally for purposes of concluding certain transactions (being residential property transactions and certain financial transactions (such as portfolio investments or hedging arrangements)).

## Exploration and Development

### *Exploration*

Beyond the current Mineral Resources, mineralization is open to expansion to the south and west. Two exploration targets have been identified.

Target 1, the Ga-Madiba extension zone, is based on results from 14 wide-spaced, step-out drill holes completed between October 26, 2012, and February 18, 2014. Ga-Madiba, which adjoins and stretches to the south from the area where Inferred Mineral Resources are estimated, could contain 115 to 235 million tonnes grading 3.1 to 4.5 g/t 3PE+Au (comprising 1.2 to 1.7 g/t Pt, 1.7 to 2.3 g/t Pd, 0.06 to 0.14 g/t Rh, 0.17 to 0.26 g/t Au), 0.23% to 0.28% Ni and 0.11% to 0.14% Cu over an area of 3.7 km<sup>2</sup>. The tonnage and grade ranges are based on intersections of 2.0 g/t 3PE+Au mineralization in drill holes completed in Target 1.

Drilling to date has successfully identified the T1 and T2 mineralized reefs and confirmed the initial interpretation that the Ga-Madiba target represents the southern strike extension to the shallow-lying Flatreef.

Target 2, which surrounds the Mineral Resource Estimates in Zones 1 and 2, could contain an estimated 260 to 450 million tonnes grading 3.4 to 4.5 g/t 3PE+Au (comprising 1.7 to 2.4 g/t Pt, 1.2 to 1.6 g/t Pd, 0.14 to 0.20 g/t Rh, 0.26 to 0.33 g/t Au), 0.30% to 0.35% Ni and 0.15% to 0.18% Cu over an area of 7.6 km<sup>2</sup>. The tonnage and grade ranges are based on 2.0 g/t 3PE+Au intersections of mineralization in 19 wide-spaced drill holes completed in Target 2 and adjacent drill holes within the Inferred Mineral Resource area. These drill holes were completed between October 26, 2012, and February 18, 2014.

*The potential quantity and grade of these exploration targets is conceptual in nature. There has been insufficient exploration and/or study to define these exploration targets as a Mineral Resource. It is uncertain if additional exploration will result in these exploration targets being delineated as a Mineral Resource.*

In addition, there are approximately 37 km<sup>2</sup> of unexplored ground beyond these two exploration target areas on the property under which the Platreef mineralization is projected to lie. It is not possible to estimate a range of tonnages and grades for this ground. There is excellent potential for mineralization to significantly increase with further step-out drilling to the south-west.

The Platreef mineralization remains open along strike and down dip. In the opinion of AMEC, there is excellent opportunity to expand the extent of known mineralization with further drilling. In particular the Ga-Madiba target has significant Flatreef exploration potential.

### *Development Program*

Ivanhoe has focused its recent development planning at the Platreef Project on an area that it refers to informally as Zone 1. This area occurs toward the north end of Turfspruit within the Flatreef portion of the UMT-TCU Mineral Resources amenable to selective underground mining methods. Zone 1 is attractive because mineralization occurs at relatively shallow depths (averaging 780 m in depth), and because the vertical thickness (of the combined 2 g/t and 3 g/t 2PE+Au grade shells) is nominally 20 m to 30 m.

Surface construction work is underway for a 7.25-metre-diameter bulk-sample shaft (Shaft #1). South Africa-based Aveng Mining, the sinking contractor for Shaft #1, is undertaking surface preparation work

at the site, where excavation of the box-cut access has begun. Upgrading of hoisting equipment to be installed in the shaft head frame is also underway.

Ivanhoe will begin the design and engineering of Shaft #2, the main production shaft, in Q2 2014. This will enable the Company to start Shaft #2 development works in Q1 2015, subject to necessary approvals and funding.

A Pre-Feasibility Study is also underway and completion is targeted for the second half of 2014. The Pre-Feasibility Study currently focuses on the Phase 1, 4 Mtpa production case, based on selling or tolling concentrate at local smelters. Studies will continue on the Phase 2, 8 Mtpa base case and Phase 3, 12 Mtpa production scenarios, with the intention of presenting an integrated development plan for the project incorporating the Phase 1 Pre-Feasibility Study.

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

The Platreef Project is located in a broad valley on flat terrain with a gradual westerly slope. There is very little topographic relief on the properties, however, to the east and west of the properties, semi-parallel, north-south-trending, high ridges flank the valley floor. A portion of the eastern ridge system trends onto Rietfontein, adjacent to Turfspruit. The elevation on the properties ranges from a maximum of about 1,140 m above sea level in northern Turfspruit to about 1,060 m above sea level on Macalacaskop. The land on the properties has been disturbed by settlements and subsistence farming. Some land has been allowed to lie fallow and is being reclaimed by bush, comprising shrubs and small trees.

Year-round access is by four-lane, paved, all-weather road from Johannesburg to Mokopane. From Mokopane the access continues as a two-lane, paved, all-weather national highway, which passes through the Platreef Project. Depending on the method of extraction, this highway may need to be re-aligned away from the footprint of any future open-pit. Access to drill sites and other areas within the Platreef Project is by gravel all-weather roads or by unpaved tracks. The closest railhead to the Platreef Project is in Mokopane, and the main line of the national railroad system passes approximately 6 km east of the Platreef Project.

The communities of Madiba and Tshamahansi are located within the Turfspruit, Macalacaskop and Rietfontein Farms, and cover a significant portion of AMK and ATS deposits. The Company contemplates that any mining operation would require community resettlement, with a relatively modest resettlement required for underground mining at the UMT-TCU deposit and a significant relocation required for open-pit mining at the AMK and/or ATS deposits.

The climate is semi-arid, with precipitation occurring as rain. The climate is such that mining operations can take place year-round. There is sufficient suitable land for any future tailings disposal, mine waste disposal, and installations such as a concentrator, smelter, and related mine infrastructure within the prospecting licences.

Electrical energy, telephone service, and other infrastructure components are available in Mokopane and are sufficient for exploration work. Large-scale infrastructure, such as high-voltage electrical lines and large volumes of water, are available for development or access at moderate distances. Eskom's new 4.8 gigawatt Medupi power station and a 400/132 kilovolt transmission substation are expected to adequately strengthen the local power network. Ivanhoe has reviewed a number of options with respect to water. The Limpopo Province area is a scarce water resource area, and to date, the Company has not selected a preferred method of obtaining water. Ivanhoe expects that the ultimate decision will depend on the scope of water requirements, with underground mining requiring less water than open-pit, and the results of proposed water development projects in the area currently in progress or under consideration. AMEC is

of the opinion that there is a reasonable expectation that the water supply needs for any proposed project development can be met.

A large, unskilled labour force lives in nearby urban areas and can be trained for many job assignments. While skilled trade positions and professional staff are available within the region a majority will have to be recruited from outside of the immediate area. Adequate town-site facilities and infrastructure exist to support an influx of personnel. Housing may have to be constructed or subsidized for some positions.

Under South African law the holder of a prospecting right or mining right has a statutory right to use the land for prospecting and mining. Prior to commencing prospecting or mining operations on the land, the holder of the relevant right has an obligation to consult with the landowner or lawful occupier who is entitled to compensation for losses and damages suffered or likely to be suffered as a result of prospecting or mining. The MPRDA sets out a procedure if agreement on compensation cannot be reached which may include determination by arbitration or a competent court. The Turfspruit and Macalacaskop farms are owned by the South African government for the local communities who are the lawful occupiers.

## **History**

During the 1970s, regional exploration was undertaken over the Platreef Project by Rustenberg Platinum Holdings Limited, a wholly-owned subsidiary of Anglo Platinum Limited, who completed several widely-spaced drill holes along the Platreef on Turfspruit and Macalacaskop. This drilling continued earlier work by the predecessor of Anglo American Platinum Corporation during the 1960s. No data from either of these programs are available to Ivanhoe. Ivanhoe acquired a prospecting permit for Macalacaskop and Turfspruit in February 1998, and subsequently entered into a joint venture with Atlatsa over Rietfontein in 2001.

Ivanhoe completed a series of exploration programs and resource estimates covering the ATS and AMK deposits throughout the 2000s. A drilling program targeting deeper mineralization commenced in 2007 and is ongoing. It has resulted in discovery of the UMT deposit and in 2010, the Flatreef portion. In 2012 the Merensky Reef analogue was recognized.

## **Geological Setting**

### *Regional Geology*

The Platreef Project is located within the northern limb of the Bushveld Complex, the worlds' largest layered intrusion (up to 7 km thick and over 60,000 km<sup>2</sup> in area) and host to approximately 75% of the worlds' primary platinum supply, in addition to being an important source of other PGEs, gold, and chrome. The Bushveld Complex is divided into four exposed sections, known as the eastern, western, northern, and southern limbs, which to a varying extent share a common geological framework. From base to top, an idealized Bushveld Complex section would include Marginal Zone, Lower Zone, Critical Zone, Main Zone, and Upper Zone. The majority of PGE production comes from the uppermost Critical Zone in the eastern and western limbs, where narrow PGE-rich seams, the Merensky Reef and UG2, occur in association with chromitite stringers and coarse-grained ultramafic rocks ("pegmatoid").

### *The Northern Limb Geology*

The northern limb hosts the mineralization on the Platreef Project. The northern limb is north-south oriented, and has a sinuous strike length of about 110 km. It is structurally separated from the rest of the Bushveld Complex by east-northeast-trending faults. Similar to the eastern and western limbs, the northern limb can be divided into five zones: (i) the Marginal Zone, dominated by fine grained norites;

(ii) the Lower Zone, dominated by harzburgites and pyroxenites; (iii) the Platreef, thought to be equivalent to the Critical Zone and dominated by pyroxenites and norites with lesser harzburgites; (iv) the Main Zone, dominated by gabbros and gabbro-norites; and (v) the Upper Zone, which includes ferrogabbros with variable amounts of magnetite. The geology of the lowermost part of the Bushveld Complex in the northern limb changes from south to north. In the south near Mokopane, the Lower Zone is locally developed and generally forms isolated intrusions, distinct from the rest of the Bushveld Complex, in the underlying country rocks. The Marginal Zone also is poorly developed, hence the Platreef typically forms the lowermost unit of the Bushveld Complex and is in contact with the underlying country rocks. From south to north over approximately 30 km, the Platreef lies on progressively lower (older) country rocks, transgressing downsection through metasedimentary rocks of the Transvaal Supergroup (southern sector) to lie on basement granite-gneiss of Archean age (central sector). Further north, the Platreef is absent, and rocks of the Main and Upper Zones lie on the basement (northern sector).

### *Platreef Project Geology*

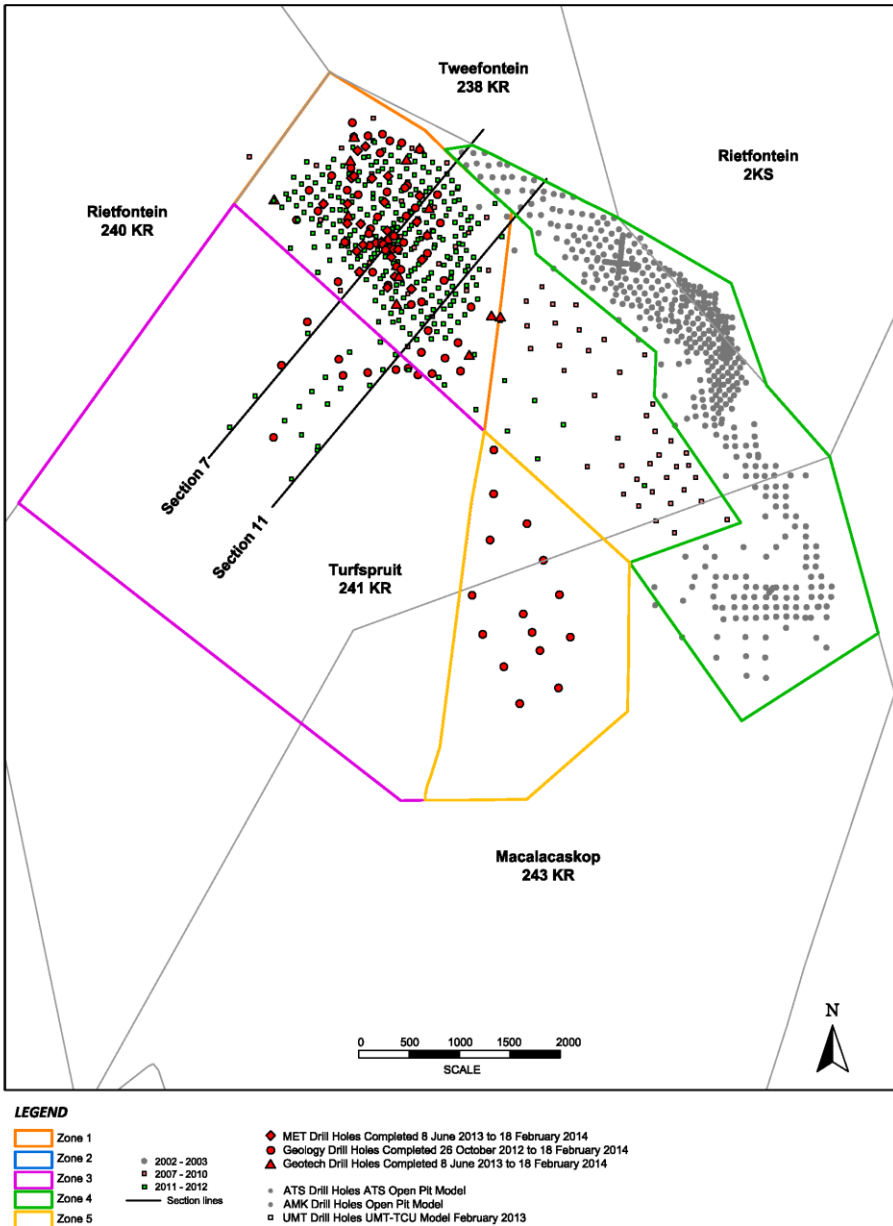
The Platreef comprises a variably layered, composite norite–pyroxenite–harzburgite intrusion that lies at the base of the Northern Limb of the Bushveld Complex, in contact with metasedimentary and granitic floor rocks. Within the Platreef Project area, four major cyclic units have been recognized which correlate well with the Upper Critical Zone rock sequence described for the main Bushveld Complex. The TCU, the main mineralized cyclic unit; is analogous to the Merensky Cyclic Unit that contains the Merensky anorthosite and pyroxenite; and hosts the principal mineralized reefs. Mineralization shows generally good continuity and is mostly confined to pegmatoidal orthopyroxenite and harzburgite. Other cyclic units that have been identified within the greater TCU are the Norite Cycles (1 and 2), Psuedo Reef, and UG2.

The TCU is particularly laterally continuous across large parts of the Platreef Project where a thick Merensky-reef analogue, coined the “Giant Pegmatoid Facies”, has been recognized. To date, no evidence of the existence of Lower Critical Zone lithologies have been found within the Turfspruit area, although Lower Zone mafic to ultramafic rocks have been intersected in many deep holes within the Platreef Project area.

A geographical demarcation of the Platreef Project area into five zones (Zone 1 to Zone 5) has been developed based on exploration criteria. Three distinct geological features are recognized within these zones including: (i) a double reef package informally termed the Bikkuri Reef; (ii) three different areas where Upper Critical Zone lithologies show significant thickening into what appear to be large depressions or “pothole” depressions controlled by existing pre-Bushveld fold structures; and (iii) the presence of a flat-lying portion of the TCU that is related to structural controls.

The most noticeable feature recognized within the TCU is a large depression, where significant thickening of the NC1 and the upper (T1) stratigraphic layer of the TCU occur, which contains a distinct thickening of the T1 feldspathic pyroxenite. A similar structure (only partly drilled) is present towards the northwestern edge of Zone 1, where thickening of both the TCU as well as its footwall units appear to have occurred. A third depression occurs mainly in the Zone 2 area in the northern part of the Macalacaskop farm.

The following figure illustrates the geographic demarcation of the Platreef Project's five zones.



A further, unique, feature recognized within Zone 1 is the Flatreef portion of the Platreef, initially recognized as being flat-lying compared to the steeper-dipping reefs within the Open Pit (Zone 4) area. The horizontal appearance of the TCU within the Flatreef appears to be broadly controlled by pre-Bushveld fold structures that existed within the Transvaal Supergroup. The Flatreef in essence appears to contain better-mineralized T2 mafic to ultramafic units compared to the surrounding areas, where the T1m and T2 reefs occur in closer proximity to each other. Smaller potholes appear to be present within the Flatreef based on the distribution of T2 Lower olivine-bearing lithologies.

Detailed drilling in Zone 1 has shown three generations of strike slip and dip slip faults that disrupt the TCU up to several tens of metres. The TCU has been interpreted to be flat, with discontinuities in the structure contours resulting from more faulting as compared to folding or basement topography.



## **Mineralization**

Within the TCU, high-grade PGE–Ni–Cu mineralization is consistently hosted within an unconformable, non-cumulate, pegmatoidal, mafic to ultramafic sequence, commonly bound by chromitite stringers and containing coarse-grained to pegmatoidal sulphides; this is known as T2. The T2 pegmatoid is subdivided into an upper Pyroxenite unit (T2 Upper) and a lower olivine-bearing pyroxenitic or harzburgitic unit (T2 Lower). Overlaying this pegmatoidal package is a barren feldspathic pyroxenite unit of variable thickness, termed T1. A second mineralized zone, called T1m, of disseminated, medium- to coarse-grained sulphides, is perched near the top of the T1 feldspathic pyroxenite.

To assist in modeling PGE grades, Ivanhoe's geologists constructed a series of nested grade shells to help with constraining grade estimation with the TCU at the Platreef Project. The 1+2+3 g/t 2PE+Au grade shell can be as much as 40 m in vertical thickness and averages 29.1 m in the Indicated Mineral Resource area and 23.6 m in the Inferred Mineral Resource area. In comparison the 2+3 g/t 2PE+Au shell averages 24.3 m in the Indicated Mineral Resource area and 18 m in the Inferred Mineral Resource area and the 3 g/t 2PE+Au shell averages 17.1 m in the Indicated Mineral Resource area and 12.9 m in the Inferred Mineral Resource area.

## **Exploration**

During the period from 1999 to 2003, the Platreef Project exploration program was comprised of field mapping, geophysical surveys, limited trenching and percussion drilling, and culminated with diamond core drilling during 2001 to 2003. Petrographic, density and metallurgical studies were also completed. There was a hiatus of exploration activity from 2004 to 2007. Drilling in the UMT deposit area recommenced in 2007 and is currently ongoing. Exploration programs have been performed by Ivanhoe personnel (i.e. geological mapping, drill hole planning and logging) or contractors (i.e. drilling activities, and geophysical surveys).

Detailed geological outcrop mapping was completed in 2002 at 1:5,000 scale and was supported by trenching and percussion drilling in areas with no outcrop. Geochemical sampling of the initial trenches proved to be ineffective in delineating mineralization.

Geophysical survey methods included aeromagnetics, gravity and to a minor extent, electromagnetics and induced polarization. Airborne magnetic (helimag) data were acquired at a line spacing of 100 m with a nominal terrain clearance of 20 m. The magnetic data do not readily distinguish the Platreef from the underlying Transvaal Supergroup, but have sufficient resolution to aid in discriminating large structures. The magnetic data are being re-interpreted in light of UMT deposit drilling. Gravity surveys were executed on 100 m line spacing, with 50 m stations along lines. The interpretation of the gravity data in combination with the magnetic data has been successfully used to derive qualitative conclusions regarding the uniformity and continuity of the Platreef unit along strike and down-dip.

AMEC is of the opinion that the exploration programs completed to date are appropriate to the style of the deposits within the Platreef Project.

## **Drilling**

Drilling on the project has been undertaken in two major phases: one from 2001 to 2003, that focused on the ATS and AMK deposits, and one from 2007 that continues to date and focuses on the UMT deposit. Drilling was completed by diamond core using contract drill crews. Most holes at the AMK and ATS deposits were drilled with NQ2 (50.5 mm) and HQ (63.3 mm) core. At the UMT deposit, Ivanhoe relied mostly on NQ (48 mm) and BQ (36 mm) diamond drill core.

### *2001 to 2003 (ATS and AMK) Drill Program (Phase I)*

Exploration drill campaigns were completed in the ATS and AMK area from 2001 to 2003. A total of 555 drill holes (194,591 m) were completed. All holes at the AMK deposit are vertical, except for nine that are drilled at angles from 45° to 60°. Holes were drilled on a nominal 100 m x 100 m local grid that is oriented north-south. All holes at the ATS deposit were drilled vertically, except for three geotechnical holes that were drilled at 50° inclination. The drill hole spacing at the ATS deposit is approximately 120 m to 140 m with local infill to 75 m spacing. A cross pattern of 21 closely-spaced (30 m spacing) vertical drill holes was also drilled for geostatistical purposes, and was situated in the area likely to be mined in the initial years of an open-pit operation. An 'open-pit mining simulation' drill hole pattern (DTS holes) of 10 m x 10 m was completed at the ATS deposit. In November 2003, drilling was placed on hold at both the ATS and AMK deposits. This exploration phase delineated mineralization at the AMK and ATS deposits that could be developed using open-pit mining methods.

Core recovery has been effectively 100% for nearly all bedrock intervals.

### *2007 to 2014 (UMT deposit) Drill Program (Phase II)*

Deep drilling on the UMT deposit commenced April 2007 and is ongoing. As of the Platreef PEA data cut-off date of October 26, 2012, Ivanhoe had completed 399 UMT drill holes for a total of 429,657 m. The UMT deposit Indicated Mineral Resources were drilled on approximately 100 x 100 m spacing, while Inferred Mineral Resources were drilled on 400 m x 400 m (locally to 400 m x 200 m and 200 m x 200 m) spacing. The UMT drill program has shown the Platreef extends to at least a depth of 1,525 m at Turfspruit.

As at March 27, 2014 there were 482 drill holes (469,308 m), including 8 drill holes in progress on the UMT program. In addition there were 113 deflections (27,776 m) drilled. Drilling was primarily for resource delineation but included in the 2013 program were drill holes for metallurgical sampling, hydrogeology and geotechnical investigations.

## **Sampling Method and Analysis**

### *Sampling*

In the Phase I drilling program, assay sampling began where observations indicated the top of bedrock. Prior to the fourth quarter of 2001, some Platreef drill intervals lacking visual mineralization were not submitted for assay. This practice was reviewed in 2002, and additional core intervals were subsequently sampled. Sampling was completed by Ivanhoe employees at the Platreef Project offices in Mokopane. A sample length of 1 m was initially selected for efficient sample handling and preparation. In May 2003, the nominal sample length was increased to 2.5 m. Sample boundaries were marked on the drill core, and the core was sawn longitudinally in half. Ivanhoe employees bagged the half-core intervals and assigned a drill hole identifier and sample number to each sample.

For the Phase II drill program conducted on the UMT deposit, assay sampling was initiated 5 m above the Platreef (in the Main Zone) and extended 20 m into the floor rocks. All core within the Platreef was assay sampled. Sample lengths were nominally 1 m, with a minimum sample length of 0.3 m and a maximum sample length of 1.25 m. Samples were broken at lithological boundaries. A photograph of each core box is taken. The photograph includes notations for box number, start and end depths, and the photographer's name. After photography, the core is transferred to the core sawing area, where the drill core is cut and sun dried.

Ivanhoe also performed bulk density sampling during its drill programs.

### *Sample Preparation – ATS and AMK*

Prior to May 2003, sample bags were transported by a private freight contractor to Set Point Laboratories in Johannesburg. After May 2003, sample preparation was completed at Set Point's new facility in Mokopane, and samples were delivered the same day they were loaded for transport.

Initial sample preparation by Set Point included crushing and pulverizing the entire sample to a nominal grind of 60% passing 200 mesh (75 µm) using a jaw crusher, a rolls crusher, and pulverizers. In March 2002, a more stringent grind of 90% passing 150 mesh (106 µm) was established, and the grind was closely monitored. These data were collected and maintained by Set Point and were reviewed by Ivanhoe staff. In August 2002, a splitting step was introduced between the sample crushing and the final pulverization, and a criterion of 95% passing 10 mesh (1.7 mm) was specified. Compliance with the pulp-grind criterion was independently checked by Ultra Trace as part of a check assay program.

### *Sample Preparation – UMT deposit*

After sampling, the UMT deposit samples are loaded on a truck and transported to Set Point in Mokopane for sample preparation. The samples are loaded in the presence of a supervisor and QA/QC coordinator. The transportation department records the number of samples, sample numbers and date of delivery in a chain of custody book. The receiving personnel at the laboratory sign the chain of custody.

Samples are crushed to 10 mm using a crusher and milled to 1.7 mm using a mill. The samples are split in half using a riffle splitter. One split is packaged and returned to Platreef. The second split is milled to 90% passing 106 µm. A split of the pulp sample ( $\pm 200$  g) is repacked for shipment to the assay laboratory. The remaining pulp is returned to Platreef. Repacked pulps are also ultimately returned to Platreef where they are placed in numerical order, standard and certified reference material samples are inserted into the sequence, and pulps are boxed for shipment to the assay laboratory.

### *Assaying*

Until 2011, laboratories utilized for the Platreef Project include the primary laboratories Set Point Laboratories (Set Point; Johannesburg, South Africa) and Ultra Trace Laboratory (Ultra Trace; Perth, Australia); the check laboratories Lakefield (Lakefield Johannesburg; Johannesburg, South Africa) and Genalysis (Genalysis; Perth, Australia). Initially, samples were submitted to Set Point. When the capacity of Set Point was exceeded (2002), an increasing proportion of samples were submitted to Ultra Trace in Perth, Australia, after preparation at Set Point. After November 2002, all samples were submitted to Ultra Trace for analysis after sample preparation was completed at Set Point. In the third quarter of 2011, Ultra Trace could no longer accommodate all of the Platreef Project's greatly increased sample production. Some samples were therefore submitted to Genalysis and Set Point Laboratories, both in Johannesburg, and ALS Chemex in Vancouver. All of these listed laboratories were, and are, independent of Ivanhoe.

Set Point analysis initially included gold, platinum, palladium, rhodium, copper, nickel, sulphur, chromium, cobalt, vanadium, rubidium, strontium, and scandium. Gold, platinum and palladium were assayed by fire assay with a lead collector. The dissolved bead was analysed by inductively-coupled plasma. Rhodium was determined in a separate fire assay utilizing a gold inquart. The other elements were determined by XRF analysis of a pressed pellet of sample pulp mixed with a binding agent. The sulphur and rhodium assays were discontinued in October 2002 due to their expense and believed limited usefulness at the time.

Ultra Trace performed a similar fire assay to determine gold, platinum and palladium. Ultra Trace did not assay for rhodium. Ultra Trace determined copper and nickel by multi-acid digestion sufficiently robust to provide dissolution of all minerals ("total" metal assay). Other metals were assayed by Ultra Trace by

XRF using the same protocol as Set Point. In December 2002, the assay suite was reduced to gold, platinum, palladium, copper and nickel.

After May 2003, a separate protocol for oxidized samples was introduced. Nickel and copper were analysed via aqua regia (partial) digestion and standard “total” acid digestion. Fire assays are used to analyze gold, platinum and palladium.

During the drilling of the ATS and AMK deposits, a large number of samples were assayed for rhodium. Most of these returned a few tens of ppb rhodium, and Ivanhoe discontinued assaying for it. In 2010, Ivanhoe assayed samples for rhodium from four core holes and commenced routine sampling for rhodium in high-grade zones. Based on results from the ATS drilling, the 2010 rhodium assay sampling program found good correlation between rhodium and platinum, and rhodium and palladium, indicating the same population regardless of 3PGE grade. The average rhodium grade is 57 ppb within the 1 g/t 2PE+Au grade shell, 77 ppb within the 2 g/t 2PE+Au grade shell and 91 ppb within the 3 g/t 2PE+Au grade shell.

Check assays were performed at Lakefield (Johannesburg) until June 2002. After June 2002, check assays were performed by Genalysis.

5% of drill sample pulps previously assayed by Ultra Trace were forwarded, along with blind CRMs and blanks, to Genalysis, who performed the same QA/QC suite, plus aqua regia digestions for nickel and copper.

Throughout the Phase I and Phase II drill programs, AMEC has repeatedly visited the project site and has regularly reviewed the sample chain of custody, quality assurance and control procedures, and qualifications of analytical laboratories. AMEC reported that the procedures and QA/QC are acceptable to support Mineral Resource estimation. AMEC also audited the assay database, core logging, and geological interpretations and found that these are acceptable to support Mineral Resource estimation.

### **Security of Samples**

Sample security has relied upon the fact that the samples were always attended or locked in the on-site sample preparation facility. Chain of custody procedures consist of filling out sample submittal forms that are sent to the laboratory with sample shipments to make certain that all samples are received by the laboratory. AMEC concluded that sample storage procedures and storage areas are consistent with industry standards.

### **Metallurgical Testwork**

There have been a number of metallurgical test work campaigns and conceptual flow sheet designs carried out for the treatment of Platreef samples since 2001. Metallurgical test work focused on maximising recovery of platinum group elements (PGEs) and base metals, mainly nickel, while producing an acceptably high-grade concentrate suitable for further processing and/or sale to a third party.

Up until 2006, metallurgical test work was carried out mainly on lower grade shallow material from the potentially large open pit area. Flotation recoveries and concentrate grades were generally low, resulting in the necessity for further processing on site.

In 2008, with the advent of the deep drilling exploratory program, test work was performed on high-grade composite samples. The high-grade test work results were promising and indicated that there was a strong possibility of increasing concentrate grade and recovery.

A flotation test work program on high-grade samples was completed at the SGS laboratories in Johannesburg. The results have indicated that a potentially saleable concentrate can be produced. Following the SGS work, a test program was undertaken at Xstrata Process Support Canada (XPS) laboratories. The XPS work did not materially add to the results from SGS Johannesburg.

In 2012, the resource was geologically re-assessed, and samples of three new geo-metallurgical units were supplied to Mintek. These units were designated T1, T2 Upper (T2U), and T2 Lower (T2L).

Although this phase of the test work is preliminary it did indicate that an effective flow sheet will involve several stages of cleaner flotation with recycling of the stage tailings. All of the three geo-met units and the two blends produced acceptable smelter-grade final concentrates at acceptable recoveries.

Previous comminution tests indicated that the plant feed is competent with respect to SAG milling and that a crusher and ball mill circuit will be the preferred option. The Platreef material is classified as hard to very hard. The flotation test work has shown that the plant feed is amenable to treatment by conventional flotation without the need for re-grinding. Flotation losses from the circuit are due to a non-floating platinum group metals (PGM) population locked in gangue at sizes of 10 µm or finer and amounting to approximately 10% - 15% of the contained PGMs.

The processing plant consists of a relatively standard flotation concentrator targeted at producing a saleable concentrate. Typical head grades and metallurgical recoveries are shown in the table below.

Description	Estimated Recovery	
	Test Calculated Head Grade PGE (g/t), Cu, Ni (%)	Test Work Recovery
Copper (Cu)	0.15 - 0.23	87% - 88%
Nickel (Ni)	0.30 - 0.46	68% - 73%
Platinum (Pt )	1.61 - 1.89	86% - 89%
Palladium (Pd)	1.65 - 2.06	86% - 88%
Gold (Au)	0.23 - 0.25	77%
Rhodium (Rh)	0.11 - 0.12	80% - 87%
PGE (3E+Au)	3.61 - 4.31	86% - 88%

## KIPUSHI PROJECT

### Property Description and Location

The Kipushi Project is a past-producing, high-grade underground zinc–copper mine in the Central African Copperbelt, in Katanga Province, DRC. The Kipushi Project lies adjacent to the town of Kipushi and the border with Zambia, and about 30 km southwest of the provincial capital of Lubumbashi. The Kipushi mine operated from 1924 until 1993 producing approximately 60 Mt at 11.03% Zn and 6.78% Cu including, from 1956 through 1978, approximately 12,673 tonnes of lead and 278 tonnes of germanium. Mining at Kipushi began as an open-pit operation but by 1926 had become an underground mine, working down to the 1150 mL. In 1993 the mine was put on care and maintenance due to a combination of economic and political factors.

Ivanhoe and Gécamines own, respectively, 68% and 32% of the Kipushi Project, through their holdings in KICO, the mining rights holder. Ivanhoe’s interest in KICO was acquired in November 2011 and comprises mining rights for copper and cobalt as well as the underground workings and related infrastructure, inclusive of a series of vertical mine shafts. For a description of the terms and conditions of the joint venture with Gécamines, see “*Material Contracts – Kipushi Joint Venture Agreement*”.

KICO holds the exclusive right to engage in mining activities within the Kipushi Project area through a number of mining rights. Three of these rights are tailings exploitation permits (12234, 12349, and 12350) which are valid until January 24, 2016 and cover an area of 1,062 hectares. The fourth right is an exploitation permit (12434) valid until April 3, 2024 and covers 505 hectares. These permits are renewable under the terms of the DRC Mining Code.

Exploitation permit (12434) currently grants KICO the right to mine and process copper and cobalt from the Kipushi Project. On June 15, 2012, the Company submitted an application to CAMI, which resulted in the extension of the exploitation permit (12434) to the extraction and processing of zinc, silver, lead and germanium.

The tailings exploitation permit 12349 encroaches upon the perimeter of a permit held by Wentona Properties Limited (“**Wentona**”), in contravention of the DRC Mining Code. The Company has obtained written consent from Wentona to the overlap; however, in order to be in strict compliance with the DRC Mining Code, Ivanhoe should obtain either a waiver or assignment of the overlapping portion of the permit held by Wentona.

The mineralization at the Kipushi Project may extend, at depth, beyond the DRC border into Zambia. KICO does not have an agreement with the Zambian government which would permit it to explore for or exploit any resources that may be in Zambia and the historical resource estimates presented for the Kipushi Project only make reference to those historical resources which lie within the DRC.

KICO holds only the subsurface mineral title to the property, which includes ownership of the underground workings as well as the various mine shafts and related infrastructure. Gécamines is the owner of the surface rights and surface infrastructure within the Kipushi Project site, including but not limited to: (i) the older concentrator at the Kipushi Project; (ii) the “new” concentrator at the Kipushi Project; (iii) the waste and tailings sites at the Kipushi Project; and (iv) the historical open-pit.

There are a number of surface related activities occurring on the land which constitutes the Kipushi Project, including the operation of the “new” concentrator, in which Ivanhoe has no ownership or control.

The property was the subject of an environmental audit by the Ministry of Environment, Nature Conservation, and Tourism, in August 2011, who reported that all environmental obligations attached to the relevant licences had been discharged. The Company commissioned a summary environmental baseline study. This study was completed in August 2012 by Golder Associates. It serves as an “Environmental Snapshot” as to the state of the property when Ivanhoe acquired the Kipushi Project in November 2011.

A number of payments are required to keep the exploitation permits in good standing. Two fees levied annually are based on the number of quadrangles held by permit type (surface rights fee) and on the surface area held under permits (land tax), as set out in the DRC Mining Code. In addition, pursuant to the Kipushi Joint Venture Agreement, KICO is required to pay to Gécamines a net turnover royalty of 2.5%, which, until the “social loan” as defined in the Kipushi Joint Venture Agreement has been repaid in full (including accrued interest), is payable by way of offset against amounts owed by Gécamines under the social loan.

### **Historical Resource Estimation**

Historical resource estimates below the 1150 mL were established through Gécamines’ core drilling and limited underground sampling. The authors of the Kipushi Technical Report concluded that the drill section spacing at 15 m intervals along the Kipushi Project fault zone was adequate for resource definition considering the strength of the mineralization continuity, however they could not determine the reliability of Gécamines’ exploration methodology since no rigorous internal or external check assaying procedures were used and not all the core was retained.

Historically, Gécamines was principally interested in the copper content of the Kipushi deposit, and not its zinc content. This explains why it used the following cut-off grade factors, based on 1970’s copper and zinc prices in determining ore and waste:

- Ore: copper > 2% or zinc > 14%
- Low grade: 1% < copper < 2% or 7% < zinc < 14%
- Waste: copper < 1% and zinc < 7%

By using this cut-off grade formula, material grading 2% Cu and 0% Zn would be considered to be ore, whereas material grading 1.9% Cu and 13.9% Zn would not. Low-grade ore, as defined above, was only mined when it occurred within an ore grade intersection. The grade categories were outlined on level plans. These cut-off grade factors were apparently not revised for years, despite changing metal prices. In the opinion of the authors of the Kipushi Technical Report, if zinc as well as copper is to be mined and concentrates produced by flotation, then this method of defining resource grades would need to be radically changed.

Three historical resource estimates are available on the Kipushi Project: (i) Gécamines (undated); (ii) Watts, Griffiths and McOuat Limited in 1996; and (iii) Techpro Mining and Metallurgy (“**Techpro**”) in 1997. All were based on Gécamines’ drilling and production information, and utilized Gécamines’ historical cut-off grades. The authors of the Kipushi Technical Report have not prepared their own estimate but are of the opinion, based on the information provided, that the 1997 Techpro estimate is generally fair and reasonable for the demonstrated (Measured plus Indicated) Mineral Resource estimation. They are also of the opinion that the inferred Mineral Resource Estimates largely represent the projection of the Kipushi Project fault zone mineralization from the 1500 mL to the 1800 mL. Below are the Techpro historical resource estimates:

## Historical Resource Estimate

Resource Category <sup>(1)</sup>	Tonnage	% Cu	% Zn
Measured (to 1295 mL)	8,899,979	2.53	9.99
Indicated (1295-1500 mL)	8,029,127	2.09	24.21
<b>Total<sup>(2)</sup></b>	<b>16,929,106</b>	<b>2.32</b>	<b>16.76</b>
Including Big Zinc Measured	793,086	1.16	33.52
Including Big Zinc Indicated	3,918,366	0.68	39.57
<b>Total Big Zinc<sup>(2)</sup></b>	<b>4,711,452</b>	<b>0.76</b>	<b>38.55</b>
Inferred (1500-1800 mL)	9,046,352	1.93	23.32

Notes:

(1) Prepared by Techpro, 1997.

(2) Historical resource estimates presented are inclusive of the historical resource estimates attributable to the Big Zinc zone.

Included in this historical resource estimate are resources within the Big Zinc zone which total 4.7 Mt grading 38.6% Zn. Gécamines discovered the Big Zinc zone of mineralization prior to placing the mine on care and maintenance in 1993. This previously unmined zone occurs between the 1200 and 1550 mL with approximate dimensions of 100 m strike length by 40-80 m width by > 300 m plunge length, and remains poorly explored at depth. Several exploration holes, drilled from difficult angles, confirmed the continuation of the Big Zinc zone below the 1640 mL, but there was insufficient drilling to declare Indicated Mineral Resources.

The historical resource estimate presented as an “Inferred Mineral Resource” largely represent the projection of the Kipushi Project fault mineralization from the 1500 mL to the 1800 mL.

The authors of the Kipushi Technical Report are of the opinion that sufficient work has not been done to classify the historical resource estimates as current Mineral Resource Estimates, and Ivanhoe is not treating this historical estimate as a current Mineral Resource. The estimate was prepared in accordance with the JORC code, but a similar historical resource estimate would be reported using CIM guidelines.

Ivanhoe will need to validate Gécamines’ previous work, by conducting new drilling, sampling, assaying, density determinations and other procedures in order to produce a mineral resource for the Kipushi Project that is current and CIM compliant. A Feasibility Study will also be necessary in order to determine whether these mineral resources are economic to mine.

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

Access to the Kipushi Project from the provincial capital and nearest major urban centre, Lubumbashi, is by paved road with some stretches of the road being under repair. The closest public airport to the Kipushi Project is at Lubumbashi where there are domestic, regional and international scheduled flights. A link with the Zambian railway system also provides access to the ports of Dar-es-Salaam in Tanzania, Maputo in Mozambique, and Durban in South Africa. At present much of the production from mines located in Katanga Province is transported by road to South Africa via Zambia.

The town of Kipushi lies within the licence area and near the mine’s infrastructure and underground access. A large proportion of the local population was employed at the mine until the suspension of mining operations in 1993. A number of mine personnel have been kept on to keep the mine secure and many of these people still live in the area. As of December 31, 2013, KICO employed approximately 312 people.

The climate is tropical with an average daytime temperature of about 27°C and annual average rainfall of about 1,100 mm. The Kipushi Project area has distinct climatic variation between the wet (November to April) and dry (May to October) seasons. Historical mining operations at the Kipushi Project operated



year-round, and it is expected that any future mining activities at the Kipushi Project would also be able to be operated on a year-round basis.

There is a significant amount of underground infrastructure at the Kipushi Project owned by KICO, including a series of vertical mine shafts and associated head frames to various depths as well as underground mine excavations. The newest mine shaft (the “**Number 5 Shaft**”) is 1,240 m deep with a lowest operating level at the 1200 mL. It provides the primary access to the lower levels of the mine and the bulk of the historical resources, including the Big Zinc zone. It has three independent friction hoists, and all compartments remain operational. The condition of the facility is fair, but will require a refurbishment program to bring the whole mine shaft to a working standard. The Number 5 Shaft is approximately 1.5 km from the main mining zone. There are a series of crosscuts and ventilation infrastructure that is still in working condition. The underground infrastructure also includes a series of pumps. Until 2011 the pumps de-watered down to a pump station at the 1206 mL. This station failed in 2011, and since that time de-watering has been restricted to operations on the 850 mL. Since Ivanhoe assumed responsibility for ongoing rehabilitation and pumping, the water level has been lowered to the 1267 mL as at March 26, 2014, after it reached 851 mL at its peak.

The property also hosts surface mining and processing infrastructure, including an older and a newer concentrator, offices, workshops, housing, and a connection to the national power grid. Electricity is supplied by the state power company of the DRC, SNEL, using two transmission lines from Lubumbashi. There are pylons in place for a third line. All of the surface infrastructure is owned by Gécamines, which has contracted use of the “new” concentrator on site to a third party.

The bulk of the historical resources, and exploration potential, lie adjacent to or below the 1150 mL main haulage, which can be accessed from the Number 5 Shaft. This shaft has provided the main access to the deposit since suspension of production and remains operational above the water line. Hanging wall drill stations are present on the 1132 mL and 1272 mL, and an underground decline is developed in the footwall to a depth of 1,327 m. The re-establishment of operations at the Kipushi Project would require refurbishment of underground access via the Number 5 Shaft, and construction of new processing and disposal facilities. Process water for any planned mining operation could be obtained from the underground pumping operations.

The topography around the Kipushi Project is gently undulating with some shallow valleys created by small streams. The major valley is that of the Kafubu River. The Kipushi Project area lies at an altitude of approximately 1,350 m above sea level. The vegetation in the area consists of forest and savannah.

Surface rights (which are distinct from mining rights) for the Kipushi Project are held by Gécamines. KICO, as holder of the exploitation permit, has, subject to the applicable approvals, authorizations and the payment of any requisite compensation, the right to occupy that portion of the surface as is within the exploitation permit area and which is necessary for mining and associated industrial activities, including the construction of industrial plants and the establishment of a means of communication and transport.

In order to access the surface infrastructure, KICO has entered into a rental contract with an affiliate of Gécamines pursuant to which KICO will be required to pay rental fees of \$100,000 per month when production at the Kipushi Project commences in exchange for the exclusive right to use the surface infrastructure held by Gécamines. Currently, KICO is paying rental fees of \$30,000 per month to lease the areas required for its operations.

## **Ownership**

The Kipushi deposit was discovered in 1915. It was put into production in 1924, as the Prince Leopold Mine by a Belgian company, Union Minière du Haut Katanga (“**Union Minière**”). Union Minière

operated the mine for 42 years. In 1967, with the formation of the state-owned mining company, Gécamines, the Prince Leopold mine was nationalized following which it was operated as the Kipushi mine by Gécamines. Production continued under Gécamines until 1993, when, due to a combination of economic and political factors, the mine was put on care and maintenance.

Following an open bidding process in October 2006, United Resources AG commenced negotiations with Gécamines which resulted in the February 2007 joint venture agreement (the “**Kipushi Joint Venture Agreement**”) and the creation of the joint venture company, KICO. The Kipushi Joint Venture Agreement was novated to the Kipushi Vendor by United Resources AG via a novation act in May 2008 and Kipushi Vendor replaced United Resources AG as a party to the Kipushi Joint Venture Agreement.

In November 2011, Ivanhoe acquired 68% of the issued share capital of KICO through Kipushi Holding, from the Kipushi Vendor, the result of which the Kipushi Vendor transferred all of its rights and obligations under the Kipushi Joint Venture Agreement to Ivanhoe.

### **Historical Production and Exploration**

From 1926 to 1993 production from the mine was approximately 60 Mt of ore at a grade of 11.03% Zn and 6.78% Cu, including from 1956 through 1978 12,673 tonnes of lead and approximately 278 tonnes of germanium. In addition, Gécamines reported that germanium and lead concentrates were produced, although not continuously.

Resources below 1150 mL have been largely established through the drilling of about 200 cored boreholes from two drill drives located in the hanging wall of the deposit at 1132 mL and 1272 mL. The Big Zinc zone was intersected by 84 of these holes. There has also been some underground sampling between 1150 mL and 1295 mL. Gécamines carried out all of this work prior to 1993.

The Kipushi Project fault zone mineralization has been traced by exploration drilling to the 1800 mL. The Big Zinc zone extends to approximately 1550 mL. The presence of mineralization in four holes drilled at steeply inclined angles, sub-parallel to the mineralization, down to the 1640 mL enabled the hypothetical projection of the Big Zinc zone to the 1800 mL.

### **Geological Setting**

#### *Regional Geology*

The Kipushi deposit occurs within the Central African Copperbelt, a 520 km-long and 50 km-wide arcuate belt covering southeast DRC (Katanga Province) and northern Zambia. It lies within the Lufilian arc, a Pan-African fold and thrust belt containing Neoproterozoic metasedimentary and metavolcanic rocks of the Katanga Supergroup. The Katanga Supergroup is subdivided from bottom to top into the Roan, Nguba, and Kundelungu Groups.

#### *Local and Property Geology*

The Kipushi deposit occurs along the northern flank of a northwest trending anticline, where it is dislocated by the north-trending Kipushi fault. The Kipushi Project mineralization occurs within and in the footwall of the fault, which juxtaposes hanging wall, unmineralized breccias of the anticline core with a footwall sequence of east-west striking, steeply north-dipping, and northward-younging dolomites, siltstones and shales of the Kakontwe Dolomite and Série Récurrente (siltstones and shales) of the Nguba Group.

## **Exploration**

Ivanhoe's 2014 drilling program, which started on March 1, 2014, is scheduled to complete approximately 100 holes totaling more than 20,000 metres. The program objectives include

- Confirmatory drilling to validate the historical resources within the Big Zinc and Fault zones to qualify them as current resources prepared in conformance with the CIM standards as required by NI 43-101;
- Extension drilling to test and upgrade the deeper portions of the Big Zinc and Fault zones, below the 1500 mL, which previously were classified as Inferred Resources;
- Obtaining large-diameter drill core from the Big Zinc zone for confirmatory metallurgical test work; and
- Exploration drilling to test areas that have not been previously evaluated, such as the deeper portions of the Fault zone and extensions to the high-grade copper mineralization of the mine's Northern zone.

## **Mineralization**

Mineralization at the Kipushi Project occurs mainly within the Kipushi fault and its footwall over a strike length of 600 m, is 10-60 m thick and dips at 70° to the north-west. The deposit is crudely zoned from copper-rich and near-surface in the north to zinc-rich and at depth in the south. Copper mineralization is mainly located in the Série Récurrente, mixed mineralization of copper, lead, and zinc are mainly hosted by the Upper Kakontwe Dolomite, and zinc mineralization occurs in the Lower and Middle Kakontwe Dolomites.

Two sphalerite-rich pipe-shaped deposits occur in the footwall of the Kipushi fault, in the Kakontwe Dolomite, and extend up to 100 m from the fault. The largest of these deposits, called the Big Zinc zone, has an average grade of 39% Zn.

## **Drilling**

Ivanhoe's 2014 drilling program, which started on March 1, 2014, is scheduled to complete approximately 100 holes totaling more than 20,000 metres.

The historical resource estimates described in the Kipushi Technical Report were based on underground drilling conducted by Gécamines, mainly from drilling stations in the hanging wall of the Kipushi fault on the 1132 mL and 1272 mL. Drilling on each level consisted of a fan of four to seven declined holes located on each of the mine transverse sections. The sections are odd-numbered in the northern half of the mine, and even-numbered in the south. The sections and drill fans had a strike spacing of 15 m along the Kipushi fault and 12.5 m apart for the Série Récurrente. The angle between the holes was +/- 15°. Drilling from the 1132 mL has been over the strike length of the deposit. Drilling has been completed from the 1272 level drill drive along the Kipushi fault zone from Section 0 to 19 and along a 285 m strike length, including a 100 to 130 m strike length in the vicinity of the footwall of the Big Zinc zone. Further northeast along the Kipushi fault zone drilling from the same level has been partially completed along a 30 m strike length between Sections 21 to 23.

Gécamines' drilling department historically carried out the drilling. When a drill hole was completed, its collar and down-the-hole deviations were recorded. A complete set of drill logs, assays and collar surveys for the Big Zinc zone drilling campaign is available. Data from earlier drilling is incomplete. However,

after some discussion with Gécamines, the authors of the Kipushi Technical Report concluded that approximately half of the missing data could still be retrieved on site, with the remainder of materials possibly being available at the Gécamines laboratory or at the Gécamines Geological Department in Likasi.

Techpro designed a computerized database for all drill hole data, with the results being encoded by a local DRC team. This database incorporated the information contained in the drill log sheets as follows: (i) drill hole number; (ii) collar position, direction (azimuth), inclination, length, core recovery, date of completion, remarks; (iii) assay results for arsenic, copper, lead, zinc, sulphur and iron; (iv) geological log, by means of simple codes; (v) mineralogical log, by means of codes; (vi) down-the-hole survey data; and (vii) hydrological data.

The Techpro established database, which includes data from 762 holes drilled at the Kipushi deposit, showed that the average length of all holes was 122 m with an average core recovery of 84%. Of these approximately 200 holes were drilled at or below the 1150 mL and had an average drill hole length of 160 m and core recovery of 89%. Mineralization, believed to form part of the Big Zinc zone, was intersected by 84 of these holes. The average length of all core samples sent for analysis (nearly 7,500 samples) was 3.44 m.

### **Sampling and Analysis**

Gécamines collected approximately 7,500 samples, all of which were submitted for analysis to its laboratory in Lubumbashi. Cores had a diameter of 30-70 mm. The core sampling and sample preparation procedures were reported as follows: (i) the cores were sawn in half; (ii) the cores, with an average length of 3.44 m, were divided into three categories (copper-copper/zinc, zinc, and copper-lead-zinc) and sampled; (iii) waste material was not sampled; (iv) remaining core was replaced and stored; and (v) aggregated half core samples were sent to the Gécamines laboratory for crushing, splitting, milling, and sieving.

Gécamines prepared half-core samples in the following sequence: (i) jaw and cylinder crush to <5 mm; (ii) split samples, mechanically and manually; (iii) mill; (iv) sieve tray; and (v) mill to 100% <100 mesh.

To analyze the samples, portions were dissolved and analyzed by atomic absorption spectrophotometer for copper, lead, zinc, arsenic, sulphur and iron. Results were reported in percentages. The laboratory then made composite samples of grouped categories, analyzing them for germanium, cobalt, silver, cadmium, and rhenium, and reported results in ppm.

No independent samples were taken and the existing geological database was not independently modelled. It is not known whether the Gécamines laboratory was certified by standards or associations.

### **Metallurgical Testwork**

During the first half of 2013 a preliminary metallurgical testwork campaign on drill core from the Big Zinc zone was carried out at Mintek. Although preliminary in nature the testwork concluded that the material was soft and had a low abrasive index. The material was found to be easily upgradable to a salable quality at high recoveries. Detailed analysis of the final concentrate indicated that it was low in impurities.

### **Security of Samples**

Historically the sample chain of custody could be expected to be good as the samples did not leave the site and were assayed at the Gécamines laboratory. The split mineralized core material was retained on

site in a core storage building. The rejects and pulps were also stored but over the years many were destroyed or lost.

Gécamines did not carry out routine check assaying. Check assays were only carried out when visual grade estimates did not correspond with the laboratory results. Gécamines protocol for internal check sampling is unknown and there was no check assaying or sampling by an independent external laboratory.

### **Mineral Resource and Mineral Reserve Estimates**

There are no current estimated Mineral Resources or Mineral Reserves.

### **Exploration and Development**

Ivanhoe has assigned technical and administrative staff to the Kipushi Project. A program is underway to de-water the lowest levels of the mine and refurbish the underground infrastructure. Furthermore, the Company plans to refurbish the existing mine shaft infrastructure.

Ivanhoe's 2014 drilling program is scheduled to complete approximately 100 holes totaling more than 20,000 metres. The drilling is designed to confirm and upgrade Kipushi's estimated historical resources and to further expand the resources on strike and at depth. Drilling will also be conducted for metallurgical test work purposes.

## **OTHER PROJECTS**

### **DRC Regional Exploration**

In addition to the permits covering the Kamoa Project and the Kipushi Project, Ivanhoe holds approximately 6,500 km<sup>2</sup> of exploration permits in Katanga Province, around the perimeter of the historical limits of the Central African Copperbelt. These permits are in all major geological provinces within Katanga Province and are prospective for a number of different types of base metal deposits, including Kamoa Mines Subgroup, and Zambian-type stratiform copper and copper-cobalt deposits, Kipushi-type zinc-copper-lead-silver-germanium deposits, Kansanshi-type copper-gold deposits and basement-hosted copper deposits. The permits in the Lufupa region are considered prospective for diamond-bearing kimberlites.

Fifty permits were originally granted in 2003 and 2005 covering an area of almost 20,000 km<sup>2</sup>. The permits have been through the first, and in some cases the second, of two stages of renewal, which requires dropping 50% of the permit area at each renewal. After the second renewal Ivanhoe will have five years of tenure remaining on these exploration permits.

Exploration has been ongoing since 2004 and has resulted in the discovery of the Kamoa deposit, and the discovery and evaluation of numerous other copper, copper-cobalt, copper-silver, and zinc-lead prospects. Historical work has comprised geochemical sampling, airborne magnetic and radiometric surveys, mapping, prospecting, pitting, trenching, air core, RC and diamond drilling. Field activities are conducted during the May-October dry season.

During 2013, Ivanhoe's DRC regional exploration focused field activities on the Lufupa, Nzilo, Lufira West and Lufupa Southeast project areas. Work completed included mapping, sampling, trenching/pitting, geophysics (ground magnetics and natural source audio-magneto tellurics – NSAMT),

and drilling (auger, diamond drilling with company-owned Land Cruiser-mounted rigs, and contracted diamond drilling). 6,657 metres of diamond drilling were completed in 43 holes.

## **Gabon**

Ivanhoe holds two exploration licences at Ndangui and Makokou, areas prospective for greenstone gold deposits. Eight diamond boreholes and 1,774 metres were completed at Ndangui in 2013. The Ndangui Au anomaly is associated with a ~north-striking, west-dipping package of mafic schists and gneissic rocks with widely spaced, thin, quartz and quartz-sulphide veins.

Auger drilling at Makokou was completed in 2013 to better define gold-in-soil anomalies. The Ndangui and Makokou licences were successfully renewed during Q4, and are valid through 2016.

## **Australia**

The Company owns 100% of the issued capital of Ivanhoe Syerston Pty Ltd. which has tenements in New South Wales upon which the Syerston lateritic nickel project (“**Syerston Project**”) is located. The Syerston Project is a development stage project hosting mainly nickel and cobalt mineralization that was subjected to an internal study in 2000. In September 2005, Ivanhoe completed an updated internal study in order to establish the financial viability of the Syerston Project under then-prevailing market conditions. As a result of significant increases in proposed capital and operating costs, the Company determined that the Syerston Project was not economically attractive at that time.

## **Employees**

As of the date of this AIF, the Company (including through its subsidiaries) had approximately 1,218 employees. Approximately 11% of the Company’s work force is unionized.

## **Foreign Operations**

The Company is currently focused on the Projects, all of which are located outside of Canada and constitute foreign operations. The Company’s performance and financial outlook is, and will remain for the foreseeable future, strongly correlated with the Projects.

## **Social and Environmental Policies**

The Company has adopted a Corporate Citizenship Statement of Values and Responsibilities that reflects the obligations and partnerships that accompany the various permissions the Company has to operate in countries and communities with divergent degrees of economic development. The Corporate Citizenship Statement of Values and Responsibilities puts a priority on: (i) compliance with established laws and regulations; (ii) respect for cultures and customs; (iii) identification and management of risks; (iv) responsive and effective management of social and environmental impacts; and (v) open and transparent communication and co-operation through trust-based relationships between the Company and all of its stakeholders.

## **RISK FACTORS**

An investment in the Class A Shares should be considered highly speculative due to the nature of the Company’s business and its early stage of development. Investments in mineral exploration and development issuers, such as the Company, involve a significant degree of risk. The exploration and development of the Projects is highly speculative, characterized by significant inherent risk and may not be successful. Ivanhoe’s mineral projects are in the exploration and development stage, do not contain

any Mineral Reserves, are without historic or current production (other than historical production at the Kipushi Project by third parties), and are located in states which are subject to higher political risks and instabilities than comparable projects in other countries. Metal prices are also subject to significant volatility, which affects the economic viability of the Projects. Anyone investing in the Company must rely on the ability, expertise, judgement, discretion, integrity and good faith of the management of the Company. There is no guarantee that Ivanhoe will be able to secure financing to meet the future development needs of its mineral projects.

The risks and uncertainties described below are not the only risks and uncertainties that the Company faces. Additional risks and uncertainties of which the Company is not aware or that the Company currently believes to be immaterial may also adversely affect the Company's business, financial condition, results of operations or prospects. If any of the possible events described below occur, the Company's business, financial condition, results of operations or prospects could be materially and adversely affected.

This AIF also contains forward-looking statements that involve risks and uncertainties. The Company's actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including the risks described below and elsewhere in this AIF. See "*Forward Looking Statements*."

*The Company has not yet demonstrated the economic feasibility of any of its Projects.*

The Company has not completed pre-feasibility or feasibility level work and analysis that would allow it to declare Proven or Probable Mineral Reserves at any of the Projects, and no assurance can be given that the Company will ever be in a position to declare a Proven or Probable Mineral Reserve on any one or more of its mineral projects. While Preliminary Economic Assessments of its Kamao and Platreef Projects have been prepared, they are early stage estimates of the potential economic viability of the Projects that do not have sufficient certainty to constitute a Pre-Feasibility Study or a Feasibility Study, and thereby enable the Company to declare Mineral Reserves. In particular, the Preliminary Economic Assessments contain the Company's estimated capital costs and operating costs which are based upon anticipated tonnage and grades of metal to be mined and processed, the expected recovery rates and other factors, none of which have been completed to date to a Pre-Feasibility Study or a Feasibility Study level. Whether the Company completes Feasibility Studies on any one or more of the Projects and thereby delineates Proven or Probable Mineral Reserves depends on a number of factors, including: (i) the particular attributes of the deposit (including its size, grade, geological formation and proximity to infrastructure); (ii) metal prices, which are highly cyclical; (iii) government regulations (including regulations relating to taxes, royalties, land tenure, land use and permitting); and (iv) environmental protection considerations. The Company cannot determine at this time whether any of these estimates will ultimately be correct or that the Projects will prove to be economically viable. Therefore, it is possible that Mineral Reserves will never be identified at the Projects, which would inhibit Ivanhoe's ability to develop the Projects into commercial mining operations, and in turn would have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*The development of the Projects into commercially viable mines cannot be assured.*

Even if a Feasibility Study delineating Proven or Probable Mineral Reserves is produced for one or more of the Projects, those Projects may not be successfully developed for commercial, technical, political, regulatory or financial reasons. Notwithstanding demonstrated feasibility, the Company's ability to complete development work and commence commercial mining operations at the Projects and market its products will depend upon numerous factors, many of which are beyond its control, including the adequacy of infrastructure, geological characteristics, metallurgical characteristics of the ore, the

availability of processing and smelting capacity, the availability of storage capacity, the supply of and demand for copper, nickel, platinum, palladium, zinc and other metals, the availability of equipment and facilities necessary to complete development, the cost of consumables and mining and processing equipment, technological and engineering problems, accidents or acts of sabotage or terrorism, currency fluctuations, changes in regulations, the availability and productivity of skilled labour, the regulation of the mining industry by various levels of governmental agencies and political factors. Furthermore, significant cost over-runs in any future development could make the Projects uneconomic, even if previously determined to be economic under Feasibility Studies. Accordingly, notwithstanding the positive results of one or more Feasibility Studies on the Projects, there is a risk that the Company would be unable to complete development and commence commercial mining operations at one or more of the Projects which would have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*The Company must develop significant infrastructure at its Projects in order to commence development and mining operations.*

The Company's future development depends on adequate infrastructure. In particular, reliable power sources, water supply, transportation and surface facilities are key determinants that are needed to develop a mine. Each Project requires the construction of substantial infrastructure to commence and to sustain mining operations, including regional infrastructure beyond any future mine site. Failure to address these infrastructure requirements could affect the Company's ability to commence or continue production at one or more of the Projects and would have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Infrastructure inputs applicable to the Projects that will require particular consideration include the following:

*Power.* While the Company believes there will be sufficient power available at the Platreef Project, it will need to develop or access newly constructed or refurbished sources of power in order to conduct commercial mining operations at each of the Kamoanga Project and the Kipushi Project. The Company has investigated potential sources of such power, and entered into a memorandum of understanding, a pre-financing agreement and a financing agreement with SNEL, which contemplates the provision of sufficient power to operate the Kamoanga Project at the mine plan rate. However, there can be no assurance that the agreements with SNEL will lead to the development of sufficient quantities of power or any third party power supplies under consideration will be developed in the future or, if developed, will be made available for use by the Company in sufficient quantities to allow it to produce at contemplated production rates. In addition, Ivanhoe will also need to secure other long term sources of power to meet the requirements of any expanded mine plans for the Kamoanga Project. Any power generation source will need to be accommodated by transmission lines, some portion of the costs of which may be borne by the Company.

*Water.* While water sources are abundant in the DRC and investigations to date indicate that there are multiple potential sources of water supply, the Platreef Project is located in a scarce water area. There is a risk that the Company will not be able to secure sufficient sources and quantities of water, particularly at the Platreef Project, where the Company will need to secure an interest in or water access rights from forthcoming water development projects. The means of such access includes securing the commercial entitlement to the water source, developing the infrastructure to transport it to the Platreef Project and obtaining necessary government and regulatory permits. There can be no assurance that any third party water development projects under consideration will be developed in the future or, if developed, will be made available for use by the Company in sufficient quantities to allow it to commence and sustain commercial mining operations. In addition, in South Africa, where the Platreef Project is located, the



National Water Authority imposed a new regime on the use of water resources and requires an integrated water use licence for all water uses. All mining operations require an integrated water use licence for all new water uses and a detailed study of the water balance in the area must precede an application for a licence. The water use licence application for the Platreef Project will be filed in Q2 2014. There is a risk that the Company will be unable to obtain a water use licence for the Platreef Project or that the Company may not be able to develop the infrastructure required to transport water subject to a water use licence on an economically viable basis.

*Transportation.* Transportation infrastructure in the DRC is poor. At both the Kamoa Project and the Kipushi Project, the Company would benefit from access to better transportation infrastructure to move equipment and facilities during development work and to transport operating inputs and mineral products during commercial operations. The Company is investigating options for improved transportation, but any such options would likely require significant capital expenditures, development in partnership with third parties and governments, and require regulatory permits. There can be no assurance that the Company will be able to access improved transportation infrastructure for mine development or commercial operations, and the failure to do so could have a materially adverse effect on the ability of the Company to efficiently develop and/or operate either of the Kamoa Project or the Kipushi Project.

*Surface Facilities.* The Platreef Project is located among a number of communities. Although the area of the UMT deposit is largely free from development, Ivanhoe will need to secure a suitable location to establish surface facilities necessary to mine and process, including processing plants and tailings facilities. It may be necessary for Ivanhoe to acquire new surface rights on adjacent properties or to effect the relocation of a portion of the local communities to construct this infrastructure in order to ensure the commercial viability of the Platreef Project. It may not be possible to acquire such an interest or effect such a relocation in a timely or cost effective manner, which could have a material adverse effect on the development of the Platreef Project.

In addition, unusual or infrequent weather phenomena, government regulations, sabotage or terrorism or other interference in the provision or maintenance of such infrastructure, could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*The Company will require approvals, licences and permits that it currently does not have in order to continue its development activities, and if deemed viable, commence mining operations.*

Prior to commencing significant development work and conducting commercial operations on its Projects, the Company will require approvals, licences and permits from various governmental authorities in both the DRC and South Africa. These approvals, licences and permits relate to, amongst others, the following: (i) mining and exploitation rights; (ii) water use rights; (iii) maintenance of title; (iv) employees; (v) health and safety; and (vi) repatriation of capital and exchange controls.

Even though the Kamoa Exploitation Licences have been granted, under the DRC Mining Code, once mining rights are granted the holder must begin development and construction of mining operations within a period of three years from the date of issuance of the licences and make annual payments of the associated surface rights fees, failing which a holder may lose its mining rights.

At the Platreef Project, Ivanhoe has submitted an application in June 2013 for a mining right under the laws of South Africa. There are numerous conditions that must be met in order to effect the granting of a mining right, including demonstrated environmental viability through an Environmental Management Program, a Social and Labour Plan providing benefits for employees and surrounding communities, technical ability and the financial resources of the applicant, as well as an HDSA equity investment (as further described under the heading "*If the Company is unable to secure an HDSA equity investment it*

*will not be able to convert the Platreef Project prospecting rights into a mining right”). Furthermore, even if the necessary mining right is granted, the Platreef Project is required to be in compliance with the MPRDA (which includes a condition that mining should commence within one year of the right being awarded, a period which may be extended by the Minister) and the conditions of any mining right. Failure to comply with the MPRDA might result in the DMR suspending or cancelling any mining right. Suspension or cancellation of the mining right by the DMR can only occur after the DMR has given the right holder a directive to rectify any breach or contravention of the MPRDA. As well, if the mining right is not received by May 31, 2014, the Company will be required to suspend all operational work at the Platreef Project until the mining right is granted by the DMR. Failure by the holder to adhere to this directive may result in the ultimate suspension or cancellation of any mining right.*

To the extent such rights approvals, licences and permits are required and not obtained or are subsequently suspended or revoked, the Company may be curtailed or prohibited from proceeding with planned exploration, development or operation of its Projects which could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects. 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 which could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

*The Company will need substantial additional financing in the future and cannot assure that such financing will be available.*

The Company will need to make substantial capital investments in the exploration and development of its Projects, and will need additional financing to do so. The Company has: (i) sustained operating losses since incorporation; (ii) limited financial resources; (iii) not earned any revenue; and (iv) no source of operating cash flow. The Company will need to raise further funds to finance any project development, as well as to conduct other exploration and development activities. The Company may, therefore, seek to raise further funds through equity or debt financing, the sale of an interest in one or more of its Projects, entering into joint ventures or seeking other means to meet its financing requirements. There is no assurance that additional funding will be available to the Company for further exploration and development of the Projects, to fulfill its obligations under any applicable agreements, to conduct other exploration activities or that the Company will ever be profitable. Failure to obtain additional financing would result in delay or indefinite postponement of further exploration and development of the Projects and the loss of mineral title interests. If the Company is unable to obtain additional financing, it would have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

*If the Company is unable to secure an HDSA equity investment it will not be able to convert the Platreef Project prospecting rights into a mining right.*

In order to obtain mining rights in respect of the Platreef Project under South African mining laws, Ivanhoe will be required to demonstrate compliance with the BEE requirements of the MRPDA and the Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry published under the provisions of Section 100(2)(a) of the MPRDA, as amended by the Amendment of the Broad-Based Socio-Economic Empowerment Charter for the South African Mining and Mineral Industry, published on September 20, 2011. BEE requirements are designed to substantially and equitably increase the ownership and management of South Africa’s resources by HDSA thereby ensuring broader and more meaningful participation in the economy by HDSA. Pursuant to these obligations, in order to obtain mining rights, the Company must “give effect to” the BEE and socio-economic objectives of the

MPRDA, including meeting a requirement that HDSA shareholders hold a 26% equity interest in the Platreef Project. The Company has adopted a broad-based BEE approach and has decided to partner with local communities in a fully vendor financed transaction. The BEE deal is structured so that 51% of the 26% BEE ownership is sold to communities and employees at discounted rates. Community ownership occurs by way of trusts as this is the only possible way to benefit the entire community fairly and equitably. The remaining 49% is being retained by the company for sale on commercial terms to a strategic HDSA partner. The Company currently has no partner for this HDSA shareholding and there is no guarantee that the Company will be able to secure an investment by an HDSA. The failure or inability of the Company to locate appropriate HDSA investors or to develop a corporate structure that meets the criteria or government ideal for an HDSA equity investment would result in the denial or delay in the grant of the Company's application for mining rights at the Platreef Project and could therefore have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Should the Company secure the necessary remaining 49% HDSA equity investment, there is no guarantee that the consideration paid for this investment will reflect the value of the interest sold in the Platreef Project or that the HDSA investors will have sufficient funds to pay all the consideration owed for its equity investment. If such funds are not available to the HDSA, the Company or a third party would need to fund this investment. The terms and conditions of the third party funding could be prohibitively expensive for the HDSA investor, which could have an adverse impact on Ivanhoe. Alternatively, if the Company was required to also fund this portion investment itself, it could put a strain on the Company's financial resources. All HDSA equity investment will also result in a dilution of the Company's ownership interest in the Platreef Project.

*Title to the Company's Projects cannot be assured.*

The acquisition of title to mineral properties in the DRC and South Africa is a very detailed and time-consuming process. Failure to make certain payments and take certain actions required to keep permits or rights in good standing may result in the loss of such permits or rights. Title to, and the area of, mineral rights may be disputed and subject to challenge and revocation, including because of defects or irregularities in the chain of title. In addition, the Projects may be subject to prior unregistered applications, agreements of transfer or land claims of which the Company is currently unaware, and title may be affected by undetected defects.

In the DRC, there may be competing claims with those of the Company or claims resulting from irregularities in the granting of licences or from the use of administrative processes not specifically contemplated by the DRC Mining Code. The Company has in the past successfully defended its title to portions of its mineral properties in the DRC against such competing claims, however, there can be no guarantees that such claims will not arise in the future or that, if they arise, Ivanhoe can continue to successfully defend against them.

In South Africa, land claims by HDSA have been lodged with a South African commission over many regions of that country under the Restitution of Land Rights Act. The Land Claims Commissioner has confirmed that local inhabitants of the Turfspruit farm have lodged a claim for restitution over this farm in the name of the Mokopane Trust. Ivanhoe has conducted an electronic search of the government gazettes, which catalogue land claims and no claims have been gazetted over Turfspruit or Macalacaskop while the Rietfontein property has been claimed by the Mamashela community. This implies that the restitution claim over Turfspruit is still being validated by the Land Claims Commissioner as land claims are only gazetted once they are proven to have merit. Claims under the Restitution of Land Rights Act had to be lodged by December 31, 1998, however, the Company understands that the government is giving consideration to reopening this process for the lodgment of further claims but nothing has yet been implemented. If this were to happen, the possibility exists of further land claims being made against

Rietfontein, Turfspruit and Macalacaskop. The current land claim regime calls for the government to pay compensation and states that a successful claimant is entitled to restoration of the actual land claimed or, where not feasible to provide, “equitable redress”, which compensation may take many forms including the grant of an appropriate right in alternative state owned land or the payment of compensation by the state. Ivanhoe will be entitled to enter into negotiations with the legitimate surface owner to secure a surface lease for any infrastructure although this may result in a delay in the timely progress of development to commercial operations at the Platreef Project. Ivanhoe is entitled to enter into negotiations with the current registered owner of the surface rights (the South African government) even if the restitution claim is still pending subject to the condition that it involves the Land Claims Commissioner in the negotiations whose function it would be to look after the interests of the land claimants.

At the Kipushi Project, tailings exploitation permit 12349 encroaches upon the perimeter of a permit held by a third party. While this third party has provided a consent to the encroachment, the area encroached upon is small and does not cover currently identified mineralization, this issue has not been definitively resolved.

Any dispute, revocation or challenge of mineral title to any one or more of the Projects could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

*Operations in the DRC are subject to numerous risks not necessarily present in other jurisdictions.*

The DRC is an impoverished country with infrastructure that is in a debilitated condition. It is in transition from a largely state-controlled economy to one based on free market principles, and from a non-democratic political system with a centralized ethnic power base to one based on more democratic principles. The northeast region of the DRC has undergone civil unrest and instability in recent years which could have an impact on political, social or economic conditions in the DRC more broadly. While the government of the DRC is working to extend the central government’s authority into the regions there can be no assurance that such efforts will be successful. In addition, many of the mineral rights and interests of the Company in the DRC are subject to government approvals, licences and permits, which, as a practical matter, are subject to the discretion of applicable governments or governmental officials. No assurance can be given that the Company will be successful in obtaining or maintaining any or all of the various approvals, licences and permits (including its existing permits at the Kamoia Project and the Kipushi Project) required to operate its Projects in full force and effect or without modification or revocation. Although Ivanhoe’s properties in the DRC are in the southeast of the country, the effect of unrest and instability on political, social or economic conditions in the DRC could result in the impairment of the Company’s exploration, future development and prospective mining operations. These risks may limit or disrupt Ivanhoe’s activities, such as by restricting the movement of funds or resulting in the deprivation of its mineral rights, and could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

*Legal protections in the DRC may be limited.*

The legal system in the DRC has inherent uncertainties that could limit the legal protections available to the Company, which include: (i) inconsistencies between and within laws; (ii) limited judicial and administrative guidance on interpreting DRC legislation, particularly that relating to business, corporate and securities laws; (iii) substantial gaps in the regulatory structure due to a delay or absence of enabling regulations; (iv) a lack of judicial independence from political, social and commercial forces; (v) corruption; and (vi) bankruptcy procedures that are subject to abuse, any of which could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

Furthermore, the DRC judicial system has relatively little experience in enforcing the laws and regulations that currently exist, leading to a degree of uncertainty as to the outcome of any litigation. It may be difficult to obtain swift and equitable enforcement of a DRC judgement, or to obtain enforcement of a judgement by a court of another jurisdiction, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Failure to ensure strict compliance with legislated requirements could have unexpected or disproportionate results which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Ivanhoe's operations in the DRC and South Africa are subject to numerous risks associated with operating in emerging economies.*

Ivanhoe's exploration and development and operating activities in the DRC and South Africa are subject to the risks normally associated with the conduct of business in countries with less developed or emerging economies. While South Africa has undergone an extended period of stability and development, both it and, in particular, the DRC have a history of political instability, significant and sometimes unpredictable changes in government policies and laws, social and labour unrest (which in some cases has been violent) and, in the case of the DRC, civil conflict and war.

These risks, which Ivanhoe believes are greater in the DRC, include, among others, labour unrest, invalidation of governmental orders and permits, corruption, uncertain political and economic environments, sovereign risk, war (including within or with other countries), civil disturbances and terrorist actions, arbitrary changes in laws or policies, the failure of foreign parties to honour contractual relations with little or no recourse to local courts, challenges to or reviews of the Company's legal and contractual rights, reviews of taxation of foreign companies, changing tax and royalty regimes, delays in obtaining or the inability to obtain, or the cancellation of, necessary governmental permits, limitations on foreign ownership, limitations on the repatriation of earnings, limitations on mineral exports, price controls, review of taxes on foreign investment, instability due to economic under-development, inadequate infrastructure and increased financing costs. As a result of conflict in the DRC, international governments may impose regulations to limit commercial trade activities for and make more burdensome purchases of goods and services originating in the DRC, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

In respect of the Kamoa Project, Ivanhoe has offered the DRC government to sell a further 15% interest on commercial terms. The offer to sell does not specify a price or the terms of such proposed sale. Such negotiations may occur over a long period of time and there is a risk that the parties will not be able to agree on the terms of such a sale. Any period of delay or deadlock in the negotiations may have material adverse political consequences for Ivanhoe in the DRC which in turn could exacerbate the risks involved in any and all dealings with the government of the DRC and could adversely impact the Kamoa Exploitation Licences.

As a result, Ivanhoe is subject to various increased economic, political, operational and other risks, any one or more of which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*There is a risk of direct government intervention in Ivanhoe's mineral property interests in both the DRC and South Africa.*

Mineral development is a sensitive political issue in both the DRC and South Africa, and as a result there is a relatively higher risk of direct government intervention in the property rights and title of Ivanhoe to the Projects than that of many other industries in those countries. Such intervention could extend to

nationalization, expropriation or other actions that effectively deprive the Company of the benefit of its interest in the Projects. In South Africa, political constituencies have from time to time raised the prospect of nationalization of mines in South Africa. In response, the government of South Africa has reviewed the issue and publicly stated that there is no present intention to consider nationalization or to change the existing government policy on this issue. There can be no assurance that the policy of the government of South Africa will not change in the future, owing to public sentiment or for any other reason.

In the DRC, there have been instances in which companies have made allegations to the effect that they had their mineral property interests expropriated by the state. While the Company has no indication that such an action would be taken against the Company, there can be no assurance that such a challenge to its interests in the Kamoa Project or the Kipushi Project will not occur in the future.

Any nationalization, expropriation or similar action would, in most cases, legally obligate the government to pay just compensation. However, even if the Company did obtain compensation in such a circumstance, there could be no guarantee that the compensation paid would represent the Company's view as to the full value of the asset lost. Accordingly, any action to nationalize or expropriate any of the Projects or other assets could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects. Furthermore, any increased perception that nationalization or expropriation of the Projects may occur could have a material adverse effect on the price of the Company's securities and its ability to access financing.

*The development and success of the Projects will be largely dependent on the future price of copper, nickel, platinum, palladium, zinc and other metals.*

Metal price volatility may affect the development of the Projects, future production, profitability, and financial condition of Ivanhoe. Metal prices are subject to significant fluctuation and are affected by a number of factors which are beyond the control of the Company. Such factors include, but are not limited to, interest rates, exchange rates, inflation or deflation, global supply and demand, and the political and economic conditions of major metal consuming countries throughout the world. The price of copper, nickel, platinum, palladium, zinc and other metals has fluctuated widely in recent years, and future material price declines could cause development of, and commercial production from, the Projects to be impracticable or uneconomic.

The metals market also tends to move in cycles. Periods of high demand, increasing profits and high capacity utilization lead to additional capacity through expansion of existing mines and investment in new mines which results in increased production. This growth increases supply until the market is saturated, leading to declining prices and declining capacity utilization until the cycle repeats. This cyclicity in prices can result in supply/demand imbalances and pressures on mineral prices and profit margins which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Depending on the price of copper, nickel, platinum, palladium, zinc and other metals, projected cash flow from planned mining operations may not be sufficient and the Company could be forced to discontinue development and may lose its interest in, or may be forced to sell, one or more of the Projects. Future production from the Company's mining properties will be dependent on metal prices that are adequate to make these properties economically viable. Furthermore, future mine plans using significantly lower metal prices could result in material write-downs of the Company's investment in mining properties.

In addition to adversely affecting the Company's current Mineral Resource Estimates and any future Mineral Reserve estimates and its financial condition, declining commodity prices can impact operations

by requiring a reassessment of the feasibility of a particular project. Such a reassessment may be the result of a management decision or may be required under financing arrangements related to a particular project. If such a reassessment determines that any of the Projects are not economically viable, then operations may cease and such Projects may never be developed. Even if the Projects are ultimately determined to be economically viable, the need to conduct such a reassessment may cause substantial delays or may interrupt operations until the reassessment can be completed. The occurrence of any of the foregoing could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Ivanhoe's Mineral Resources are estimates only and are subject to change due to a variety of factors.*

There is no certainty that the Mineral Resources, or any future Mineral Reserve, attributable to Ivanhoe will be realized. There is a degree of uncertainty in the estimation of Mineral Reserves and Mineral Resources. Until Mineral Reserves or Mineral Resources are actually mined and processed, the quantity of Mineral Reserves or Mineral Resources and related grades must be considered as estimates only.

Estimation of Mineral Reserves and Mineral Resources is a subjective process that relies on the judgement of the persons preparing the estimates. The process relies on the quantity and quality of available data and is based on knowledge, mining experience, analysis of drilling results and industry practice. Valid estimates made at a given time may change significantly in the future when new information becomes available. While the Company believes that the Mineral Resource Estimates included in this AIF are well established and represent management's best estimates, by their nature Mineral Resource Estimates are imprecise and depend, to a certain extent, upon the analysis of drilling results and statistical inferences that may ultimately prove to be inaccurate. Inferred Mineral Resources, in particular, have a degree of uncertainty as there is a limited ability to assess geological continuity. There is a risk that any estimate of Inferred Mineral Resources will not be capable of upgrading to Mineral Resources with sufficient continuity to allow them to be used in connection with the estimation of Mineral Reserves.

In addition, estimates of Mineral Reserves and Mineral Resources may have to be recalculated based on fluctuations in copper, nickel, platinum, palladium, zinc or other metal prices, results of drilling, metallurgical testing and production, including dilution, and the evaluation of mine plans subsequent to the date of any estimates. Any material change in the quantity of Mineral Reserves, Mineral Resources or the related grades may affect the economic viability of the Projects and could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Environmental remediation and refurbishment requirements at the Kipushi Project could impose additional costs on the Company and could have a negative effect on the timely progress of exploration and future development of the Kipushi Project.*

The Kipushi Project was the site of an operating mine for several decades, followed by close to 20 years during which it was on a limited care and maintenance program. The facilities on site are in a degraded state. The Company must continuously pump water from the mine to prevent flooding and is discharging this water, which is not being regularly analysed as to its content, into a nearby river. The Company is presently conducting a summary environmental baseline study, but as yet has not quantified the scope and extent of environmental damage from prior operations. Ivanhoe intends to undertake investigations and measures to quantify the scope of remediation work required to mitigate any potential liability for breach of environmental laws that could be imposed on KICO. In particular, the property has been subjected to an environmental audit by the DRC environment ministry who, in August 2011 reported that all environmental obligations attached to the relevant licences had been discharged and Ivanhoe has obtained an indemnity from Kipushi Vendor for any liability arising as a result of environmental damage

incurred prior to Ivanhoe's acquisition of the shares of KICO. Notwithstanding these events, there is a risk that KICO could become liable for a breach of environmental laws and obligated to perform environmental remediation as a result of activities that occurred prior to Ivanhoe's acquisition of the shares of KICO. Any such obligations could impose additional costs on the Company, particularly if it is not able to enforce its indemnity from Kipushi Vendor, and could affect the timely progress of exploration and development at the Kipushi Project.

The Company could also become liable for environmental obligations arising from activities after its acquisition of the shares of KICO. Ivanhoe has inherited the existing mine site infrastructure and does not know the extent to which these facilities must be remediated to ensure that ongoing operations are conducted in compliance with environmental laws. In addition, Ivanhoe only holds the rights to the subsurface infrastructure at the property, and there are a number of surface-related activities occurring on the land comprising the Kipushi Project licence area, including the operation of a concentrator and artisanal mining activities, in which Ivanhoe has no ownership or control. There is a risk that any environmental liabilities arising as a result of surface-related activities could be attributed to Ivanhoe whether or not such liabilities are the responsibility of Ivanhoe. Any such liability or remediation obligations could have an adverse effect on Ivanhoe's ability to advance the exploration and development of the Kipushi Project, could impose additional costs on Ivanhoe or could result in the withholding or withdrawal of permits and licences required to explore and develop the Kipushi Project.

The occurrence of any of the foregoing could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*The ability of the Company to attract qualified personnel in South Africa and the DRC may be affected by crime, poor social institutions, legal restrictions and political and economic instability.*

The Company may have difficulty attracting qualified personnel to work on its Projects. In the DRC, increased demand for skilled workers has created a shortage of skilled workers and intense competition for these workers, particularly as DRC legislation limits the number of foreign workers at a mine site at 2% to 2.5% of the workforce, with certain positions reserved exclusively for Congolese staff. As such, the ability to attract, train and retain skilled workers is a high priority for all mineral exploration and development companies in the DRC. There are more qualified personnel available in South Africa, but even in South Africa there are restrictions on labour practices including in particular BEE requirements and rules regarding labour organization and unions that may impede the Company's ability to retain qualified personnel on a timely basis.

It may also be difficult to attract and retain qualified expatriate workers even if the Company is able to overcome legal and political restrictions on using them. A large portion of the DRC and South African populations only have access to very minimal education, health care, housing and other services, including water and electricity. This, combined with other factors, has led to high levels of crime and unemployment in South Africa which has impeded investment and prompted the emigration of skilled workers. These issues are substantially more acute in the DRC. As a result of the socio-economic situation in these countries, the Company may not be able to recruit or retain a sufficient number of skilled workers and other key personnel or be able to train and retain a sufficient number of unskilled workers to meet the Company's requirements, especially as it grows and requires an increasing number of personnel. Failure by the Company to attract and retain a sufficient number of skilled workers or to attract, train and retain a sufficient number of unskilled workers in the DRC and South Africa could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.



*Currency fluctuations may affect the costs that Ivanhoe incurs in its operations.*

The Company's reporting currency is the U.S. dollar. The IPO and the non-brokered private placement closed in October 2013 were, and any other future equity financing activities are expected to be, completed in Canadian dollars while a significant portion of its operating expenses will be incurred in South African Rand, Congolese Francs and other foreign currencies. From time to time, the Company may borrow funds and incur expenditures that are denominated in a foreign currency. In addition, in the event that Ivanhoe successfully develops an operating mine, the Company expects to sell some or all of its products to foreign markets. Metals are sold throughout the world, based principally on a U.S. dollar price, but as stated, a significant portion of Ivanhoe's operating expenses are incurred in non-U.S. dollar currencies. The appreciation of the South African Rand or Congolese Francs against the U.S. dollar would increase the costs of operations, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Mining operations are subject to laws and regulations relating to the protection and remediation of the environment.*

The Company's future mining operations and exploration activities are subject to laws and regulations relating to the protection and remediation of the environment. These laws, regulations and the governmental policies for implementation of such laws and regulations are constantly changing and are generally becoming more restrictive. The costs associated with compliance with these laws and regulations are substantial and possible future laws and regulations and changes to existing laws and regulations (including the imposition of higher taxes and mining royalties) could cause additional expense or capital expenditure, or result in restrictions or delays in the Company's development plans.

Ivanhoe cannot give any assurance that, notwithstanding its precautions, breaches of environmental laws, whether inadvertent or not, or environmental pollution, will not occur. In the event of environmental misconduct in the DRC, the Minister of Mines in the DRC can suspend the Company's rights to develop its mineral interests. The Minister of Mineral Resources in South Africa may cancel or suspend a prospecting or mining right if the holder is contravening the approved environmental management plan / program for the prospecting or mining operations and has failed to remedy such contravention following receipt of a compliance directive. The environmental authorities in South Africa have similar rights in that they may cancel or suspend environmental authorizations if the holder of the authorization has failed to remedy a contravention following receipt of a compliance directive.

A breach of environmental laws and regulations may allow governmental authorities and third parties, who have an interest in any future mining operations or the consequences of mining operations, to bring lawsuits based upon damages to property and injury to persons resulting from the environmental impact of the Company's potential future operations which could lead to the imposition of substantial fines, penalties or other civil or criminal sanctions and could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

If the Company's environmental compliance obligations in the DRC or South Africa were to vary as a result of changes to the legislation, if certain assumptions it makes to estimate liabilities are incorrect, or if unanticipated conditions were to arise in its operations, the Company's expenses and other obligations could increase, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*As a participant in the resource extraction industry, Ivanhoe may face opposition from local and international groups.*

There is an increasing level of public concern relating to the effects of mining production on its surroundings, communities and environment. Certain non-governmental organizations, public interest groups and reporting organizations (“NGOs”), who oppose globalization and resource development and who may not be bound to codes of ethical reporting, can be vocal critics of the mining industry. In addition, there have been many instances in which local community groups have opposed resource extraction activities, which have resulted in disruption and delays to the relevant operation. While the Company seeks to operate in a socially responsible manner, NGOs or local community organizations could direct adverse publicity and/or disrupt the operations of the Company in respect of one or more of its properties, regardless of its successful compliance with social and environmental best practices, due to political factors, activities of unrelated third parties on lands in which the Company has an interest or the Company’s operations specifically. Any such actions and the resulting media coverage could have an adverse effect on the reputation and financial condition of the Company or its relationships with the communities in which it operates, which could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

Of specific note is that two large urban communities and several smaller communities inhabit portions of the Platreef Project. Ivanhoe has entered into agreements with the lawful occupiers of the prospecting area, which provide for among other things, the compensation for losses or damages they may incur as a result of the Company’s activities. Nevertheless, certain members of these communities have in the past and may in the future unlawfully and illegally disrupt prospecting or mining operations. Further, on instruction from the DMR, Ivanhoe agreed to stop making payments under the agreements, effective November 1, 2012 and conducted negotiations with the community leaders, government and communities to amend these agreements in accordance with recommendations made by the DMR and Department of Rural Development & Land Reform. After the negotiation process it was decided to vary the terms of these agreements and leave them in force until the expiry of the prospecting right. Consultations have just commenced for the negotiation of a long term surface lease over the proposed mining area. There is a risk that the process of negotiating a long term surface lease may cause delays which could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects. Furthermore, there is a risk of further disruptions from the communities that may cause delays which could have a material adverse effect on Ivanhoe’s business, financial condition, results of operations or prospects.

*The costs of complying with applicable laws and governmental regulations may have an adverse impact on the Company’s business.*

The Company’s operations and exploration activities are subject to laws and regulations governing various matters. These include laws and regulations relating to repatriation of capital and exchange controls, taxation, labour standards and occupational health and safety and historic and cultural preservation.

In particular, mining operations are subject to a variety of industry specific health and safety laws and regulations. These laws and regulations are formulated to improve and to protect the safety and health of employees. They have limited, if any, application to the Company while it remains in the exploration stage, except to the extent that they may impact the scope and costs of refurbishment of the existing infrastructure at the Kipushi Project and may impact bulk sampling activities for both the Kamoia Project and the Platreef Project. In South Africa, recent fatalities in the mining industry have caused the government to introduce compulsory shutdowns of operations to enable investigations into the causes of the accidents. Should compliance with standards require a material increase in future expenditure, it

could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Amendments to current laws, regulations and permits governing operations and activities of mining companies, or the more stringent enforcement thereof, could have a material adverse effect on the Company's business, financial condition, results of operations or prospects by increasing exploration expenses, future capital expenditures or future production costs or by reducing the future level of production, or cause the abandonment of or delays in the development of the Projects.

*Development of the open-pit resources at the Platreef Project would require substantial relocation of existing communities*

Two large urban communities and additional smaller communities inhabit portions of the Platreef Project. The settlement of Madiba is situated on the southwest portion of the Macalacaskop farm, and the settlement of Tshamahansi exists over significant parts of, and northeast of, the Turfspruit farm, extending onto the Rietfontein farm. A significant relocation of communities would be required, at the Company's expense, to enable open-pit mining of the ATS and AMK deposits which could be prohibitively expensive. The Company has discussed the prospect of relocation with community members with a view to negotiating a settlement plan. Ultimately, there is no guarantee that these negotiations will be successful or that it will be possible to conclude on terms acceptable to the Company, and this may disrupt prospecting or mining operations or may result in extended delays while statutory negotiation processes or judicial remedies are followed to adjudicate compensation. Any such delays could have a material adverse effect on the Company's ability to develop and operate the Platreef Project's open-pit resources, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Furthermore, as the local communities in South Africa have come to expect relocation, even if not strictly required, the Company may need to negotiate compensation and/or relocate more of the community than is otherwise required to obtain their support for the development of the Platreef Project.

*The Company's internal controls and procedures may not be sufficient to ensure compliance with its anti-bribery and anti-corruption requirements.*

The Company's activities are subject to a number of laws that prohibit various forms of corruption, including local laws that prohibit both commercial and official bribery and anti-bribery laws that have a global reach, such as the *Corruption of Foreign Public Officials Act* (the "CFPOA"). The increasing number and severity of enforcement actions in recent years present particular risks with respect to Ivanhoe's business activities, to the degree that any employee or other person acting on the Company's behalf might offer, authorize, or make an improper payment to a foreign government official, party official, candidate for political office, or political party, an employee of a foreign state-owned or state-controlled enterprise, or an employee of a public international organization.

Certain countries in which the Company operates present heightened risks from an anti-corruption perspective. Ivanhoe has operations in South Africa and the DRC, has entered into certain joint operation agreements with third parties at some of its Projects and holds, or is expected to hold, its interests in certain of its properties jointly with government or government owned / controlled enterprises and will require permits, licences and approvals for its operations. Ivanhoe will have limited ability to control the activities of its partners as it relates to such matters.

Ivanhoe has an anti-corruption policy, an anti-fraud policy, internal controls and procedures intended to address compliance and business integrity issues and Ivanhoe trains its employees on anti-bribery compliance on a global basis. However, despite careful establishment and implementation there can be

no assurance that these or other anti-bribery, anti-fraud or anti-corruption policies and procedures are or will be sufficient to protect against fraudulent and/or corrupt activity. In particular, the Company, in spite of its best efforts, may not always be able to prevent or detect corrupt or unethical practices by employees or third parties, such as sub-contractors or joint venture partners, which may result in reputational damage, civil and/or criminal liability (under the CFPOA or any other relevant compliance, anti-bribery, anti-fraud or anti-corruption laws) being imposed on Ivanhoe, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Prior to its acquisition by the Company in November 2011, KICO kept inadequate books and records and had internal controls and procedures inconsistent with the Company's standards.*

Although the Company has internal controls and procedures intended to address compliance and business integrity issues, prior to its acquisition by the Company, KICO kept a poor set of books and records. As a result, the Company may not be able to properly evidence past events, transactions or obligations or detect past unethical practices by employees or third parties, such as sub-contractors or joint venture partners, which may result in reputational and/or economic damage to the Company, and which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects. As well, the Company's current controls and procedures may not be sufficient to prevent fraud and to ensure compliance with relevant laws, despite careful establishment and implementation.

*The Company is subject to risks applicable to joint ventures.*

The Company holds its interest in each of the Projects in conjunction with minority holders. Failure of the Company's co-owners to meet their obligations to the Company or to third parties in respect of the Projects could have a material adverse effect on the Company. Although the Company is entitled to appoint a majority of the directors of the relevant operating and holding companies related to the Projects and is responsible for the day-to-day operation and management of the Projects, certain members of the boards of directors of the holding companies or operating companies of the Projects are, or will be, nominated by the minority co-owner. Certain decisions require, or will require, unanimous approval, such as: (i) amendments to constitutional documents; (ii) issuances of new securities; (iii) dissolution; (iv) mortgage of the assets; (v) merger or division of the form of organization; and (vi) project finance. To the extent unanimous consent cannot be obtained, there is a risk that the Company will not be able to effect these matters despite the Company's desire to do so.

At the Platreef Project, in the event Ivanhoe elects to proceed with open-pit mining on the Rietfontein property, it is dependent on Atlatsa maintaining its prospecting rights with respect to same and, prior to expiry of the renewal (if granted), converting it into a mining right. The Rietfontein Right held by Plateau Resources, a subsidiary of Atlatsa, covers the Rietfontein property, expired on November 27, 2011. Atlatsa submitted an application for renewal of this prospecting right, but as at the date of this AIF has not yet received confirmation of this renewal. The Rietfontein Right remains valid until the renewal application has been granted or turned down. If Atlatsa were to lose the Rietfontein Right, the Mineral Resources amenable to open-pit methods on Macalacaskop are not expected to be affected; however, Mineral Resources amenable to open-pit methods, which have been reported for the Turfspruit and Rietfontein properties in the aggregate, would need to be re-evaluated. In addition, further agreements and ministerial consent are required to give effect to the Settlement and New Project Agreement, and the proposed contribution of, and sharing in, the two prospecting rights to the joint venture prior to which Ivanhoe will have no legal title in relation to the Rietfontein Right. The failure of Atlatsa to obtain renewal of this prospecting right, to comply with the conditions of the right for Rietfontein, or if Atlatsa is otherwise impeded from obtaining, or if obtained exercising its rights under, the prospecting right, for any reason, including the winding up of its business, insolvency or other factors which may be beyond the control of either Ivanhoe or Atlatsa, it could restrict the Company's ability to develop the open-pit

portion of the Platreef Project or otherwise engage in activities requiring rights to the land, which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

In addition, the ownership and development of the Projects with a minority co-owner creates the potential for disputes or disagreements, including: (i) disputes among the parties as to the performance or scope of each party's obligations under relevant agreements; (ii) financial difficulties encountered by a party affecting its ability to perform its obligations; and (iii) conflicts between the policies or objectives adopted by the Company and the minority co-owner. There can be no assurance that disputes or disagreements will not arise in the future. If any dispute or disagreement does arise between the Company and a minority co-owner, it could be time-consuming, costly and distracting for the Company and disrupt the timely progress of development of a Project or even result in the loss of a Project. The occurrence of any of the foregoing could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Potential future acquisitions or investments in other companies may have a negative impact on the Company's business.*

Ivanhoe may seek to expand its business through acquisitions as it intends to consider and evaluate opportunities for growth through acquisitions when suitable acquisition targets present themselves; however, there can be no assurance that the Company will find attractive acquisition candidates in the future, or that Ivanhoe will be able to acquire such candidates on economically acceptable terms, if at all. Acquisitions may require substantial capital and negotiations of potential acquisitions and the integration of acquired operations could disrupt the Company's business by diverting management, and employees' attention away from day-to-day operations. The difficulties of integration may be increased by the necessity of coordinating geographically diverse organizations, integrating personnel with disparate backgrounds and combining different corporate cultures.

At times, acquisition candidates may have liabilities or adverse operating issues that the Company fails to discover through due diligence prior to the acquisition. If the Company consummates any future acquisitions, the Company's capitalization, and results of operations may change significantly.

Any acquisition involves potential risks, including, among other things: (i) mistaken assumptions about mineral properties, Mineral Resources and costs, including synergies; (ii) an inability to successfully integrate any operation Ivanhoe acquires; (iii) an inability to hire, train or retain qualified personnel to manage and operate the operations acquired; (iv) the assumption of unknown liabilities; (v) limitations on rights to indemnity from the seller; (vi) mistaken assumptions about the overall cost of equity or debt; (vii) unforeseen difficulties operating acquired projects, which may be in new geographic areas; and (viii) the loss of key employees and/or key relationships at the acquired project.

Acquisitions or investments may require the Company to expend significant amounts of cash, resulting in the Company's inability to use these funds for other business purposes. The potential impairment or complete write-off of goodwill and other intangible assets related to any such acquisition may reduce the Company's overall earnings and could negatively affect the Company's balance sheet.

The occurrence of any of the foregoing could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Ivanhoe's insurance coverage does not cover all of its potential losses, liabilities and damages related to its business and certain risks are uninsured or uninsurable.*

The Company's business is subject to a number of risks and hazards (as further described herein). Although the Company maintains insurance to protect against certain risks in such amounts as it considers to be reasonable, its insurance will not cover all the potential risks associated with its activities, including any future mining operations. The Company may also be unable to maintain insurance to cover its risks at economically feasible premiums, or at all. Insurance coverage may not continue to be available or may not be adequate to cover any resulting liability. Moreover, insurance against risks such as environmental pollution or other hazards as a result of exploration or production may not be available to the Company on acceptable terms. The Company might also become subject to liability for pollution or other hazards which it is not currently insured against and/or in future may not insure against because of premium costs or other reasons. Losses from these events may cause the Company to incur significant costs which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Mining is inherently dangerous and subject to factors or events beyond the Company's control.*

The Company's current business, and any future development or mining operations, involve various types of risks and hazards typical of companies engaged in the mining industry. These risks affect the current exploration, development and refurbishment activities of the Company, and will affect the Company's business to an even larger extent once commercial mining operations, if any, commence. Such risks include, but are not limited to: (i) industrial accidents; (ii) unusual or unexpected rock formations; (iii) structural cave-ins or slides and pitfall, ground or slope failures and accidental release of water from surface storage facilities; (iv) fire, flooding and earthquakes; (v) rock bursts; (vi) metals losses; (vii) periodic interruptions due to inclement or hazardous weather conditions; (viii) environmental hazards; (ix) discharge of pollutants or hazardous materials; (x) failure of processing and mechanical equipment and other performance problems; (xi) geotechnical risks, including the stability of the underground hanging walls and unusual and unexpected geological conditions; (xii) unanticipated variations in grade and other geological problems, water, surface or underground conditions; (xiii) labour disputes or slowdowns; (xiv) work force health issues as a result of working conditions; and (xv) force majeure events, or other unfavourable operating conditions.

These risks, conditions and events could result in: (i) damage to, or destruction of, the value of, the Projects or their facilities; (ii) personal injury or death; (iii) environmental damage to the Projects or the properties of others; (iv) delays or prohibitions on mining or the transportation of minerals; (v) monetary losses; and (vi) potential legal liability and any of the foregoing could have a material adverse effect on the Company's business, financial condition, results of operation or prospects. In particular, underground refurbishment and exploration activities present inherent risks of injury to people and damage to equipment. Significant mine accidents could occur, potentially resulting in a complete shutdown of the Company's operations at one of the Projects which could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*It may not be possible to effect service of process and enforce judgments outside of Canada.*

A number of the Company's subsidiaries are incorporated or otherwise organized under the laws of foreign jurisdictions and a number of the directors and officers of the Company and the experts named in this AIF reside outside Canada. In addition, some or all of the assets of those persons and the Company and its subsidiaries are located outside of Canada. It may not be possible for claimants to collect from or enforce judgements obtained in courts in Canada predicated on the civil liability provisions of securities legislation against the Company's assets, its directors and officers and certain of the experts named in

this AIF. Moreover, it may not be possible for shareholders to effect service of process within Canada upon the directors, officers and experts referred to above.

*Competition in the mining industry may adversely affect the Company.*

The mining industry is intensely competitive. The Company competes with other mining companies, many of which have greater resources and experience. Competition in the mining industry is primarily for: (i) properties which can be developed and can produce economically; (ii) the technical expertise to find, develop, and operate such properties; (iii) labour to operate the properties; and (iv) capital to fund such properties. Such competition may result in the Company being unable to acquire desired properties, to recruit or retain qualified employees or to acquire the capital necessary to fund its operations and develop its properties. The Company's inability to compete with other mining companies for these resources could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

Many competitors not only explore for and mine minerals, but conduct refining and marketing operations on a worldwide basis. In the future, the Company may also compete with such mining companies in refining and marketing its products to international markets. Any inability to compete with established competitors could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Ivanhoe is dependent on qualified personnel.*

The Company's business is dependent on retaining the services of its key management personnel with a variety of skills and experience, including in relation to the development and operation of mineral projects. The success of the Company is, and will continue to be, dependent to a significant extent on the expertise and experience of its directors and senior management. Ivanhoe does not have in place formal programs for succession and training of management. Failure to retain, or loss of, one or more of these people could have a material adverse effect on the Company's business, financial condition, results of operations or prospects. The Company's success will also depend to a significant degree upon the contributions of qualified technical personnel and the Company's ability to attract and retain highly skilled personnel in the DRC and South Africa in particular. Competition for such personnel is intense, and the Company may not be successful in attracting and retaining qualified personnel in the DRC or South Africa, or in obtaining the necessary work permits to hire qualified expatriates. Its inability to attract and retain these people could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Directors and officers may be subject to conflicts of interest.*

Certain directors and officers of the Company are or may become associated with other mining and/or mineral exploration and development companies which may give rise to conflicts of interest. Directors who have a material interest in any person who is a party to a material contract or a proposed material contract with the Company are required, subject to certain exceptions, to disclose that interest and generally abstain from voting on any resolution to approve such a contract. In addition, directors and officers are required to act honestly and in good faith with a view to the best interests of the Company. Some of the directors and officers of the Company have either other full-time employment or other business or time restrictions placed on them and accordingly, the Company will not be the only business enterprise of these directors and officers. Further, any failure of the directors or officers of the Company to address these conflicts in an appropriate manner, or to allocate opportunities that they become aware of to the Company could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*Labour disruptions and/or increased labour costs could have an adverse effect on the Company.*

Trade unions could have a significant impact on the Company's labour relations. Approximately 11% of the Company's work force is unionized. The Company has reached an agreement with the union at its operations in the DRC and at its South African operations. The Company cannot give assurance that it will be able to negotiate or renew union agreements without a significant increase in labour costs, which if not conceded could result in work stoppages and other labour disturbances. Increased labour costs, a strike or other labour disruption could have a material adverse effect on the Company's business, financial condition, results of operations or prospects.

*The Company's operations may be affected by exchange control regulations in South Africa.*

The ability of the Company to transfer funds out of South Africa and to enter into agreements which require or potentially require the transfer of funds out of South Africa is subject to South African Exchange Control Regulations. The Exchange Control Department has wide discretion that is exercised in accordance with the Exchange Control Regulations and in particular its exchange control rulings in line with the policy guidelines laid down by the South African Minister of Finance. If the Company makes an application to the South African Reserve Bank for a transfer of funds or to enter into an agreement which will involve a transfer of funds (including, for example, any future debt financing agreement involving repayment to a foreign lender), there can be no assurance that such transfer or agreement will be approved. Any failure to obtain, or material delay in obtaining, the necessary approval, or the imposition of any restrictions on the Company in respect of any such transfer or agreement could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

*The Company faces certain risks in dealing with HIV/AIDS and tuberculosis.*

HIV/AIDS, tuberculosis and associated diseases remain the major health care challenge faced by the South African and DRC mining industries. Employee-related costs in Africa are affected by HIV/AIDS and tuberculosis in the form of increased absenteeism, lower morale, reduced productivity, increased recruitment and replacement costs, higher insurance premiums and increased benefit payments and other costs of providing treatment. Some of the Company's employees suffer from HIV/AIDS and this could have a material adverse impact on the Projects (particularly if and when they become more labour-intensive mining operations) and, consequently could have a material adverse effect on Ivanhoe's business, financial condition, results of operations or prospects.

## **DIVIDENDS AND DISTRIBUTIONS**

The Company has never declared or paid a dividend. The Board intends to retain future earnings for reinvestment in the Company's business, and therefore, has no current intention to declare or pay dividends on the Class A Shares or the Class B Shares in the foreseeable future. The Company's dividend policy will be reviewed from time to time in the context of its earnings, financial condition and other relevant factors. There can be no assurance that the Company will generate sufficient earnings or cash flow to allow it to pay dividends.



## **DESCRIPTION OF CAPITAL STOCK**

The Company is authorized to issue an unlimited number of Class A Shares, an unlimited number of Class B Shares and an unlimited number of Preferred Shares. The following is a summary of the Company's capital stock. It does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of British Columbia law, the Company's Certificate of Continuation, Notice of Articles and Articles of Continuation. As at March 28, 2014, 575,964,092 Class A Shares, 8,493,120 Class B Shares and nil Preferred Shares are issued and outstanding.

### **Class A Shares**

The holders of Class A Shares are entitled to receive notice of, and to attend all meetings of Ivanhoe's shareholders and to have one vote for each Class A Share held except to the extent specifically limited by the BCBCA. The Class A Shares and Class B Shares will vote together as a single class on all matters at any meeting of shareholders, except as required by the BCBCA. Subject to the rights, privileges, restrictions and conditions attached to any Preferred Shares and any other shares ranking senior to the Class A Shares, the holders of Class A Shares, ranking equally with the Class B Shares, are entitled to receive such dividends as the Board from time to time, by resolution, declares. Subject to the rights, privileges, restrictions and conditions attached to any Preferred Shares and any other shares ranking senior to the Class A Shares, in the event of the liquidation, dissolution or winding-up of the Company or upon any distribution of the assets of Ivanhoe among Ivanhoe's shareholders for the purpose of winding up its affairs, the holders of Class A Shares are entitled to share in the proceeds pro rata with the holders of Class B Shares.

### **Class B Shares**

The holders of Class B Shares are entitled to receive notice of, and to attend all meetings of Ivanhoe's shareholders and to have one vote for each Class B Share held except to the extent specifically limited by the BCBCA. The Class B Shares and Class A Shares will vote together as a single class on all matters at any meeting of shareholders, except as required by the BCBCA. Subject to the rights, privileges, restrictions and conditions attached to any Preferred Shares and any other shares ranking senior to the Class B Shares, the holders of Class B Shares, ranking equally with the Class A Shares, are entitled to receive such dividends as the Board from time to time, by resolution, declares. Subject to the rights, privileges, restrictions and conditions attached to any Preferred Shares and any other shares ranking senior to the Class B Shares in the event of the liquidation, dissolution or winding-up of the Company or upon any distribution of the assets of Ivanhoe among Ivanhoe's shareholders for the purpose of winding-up its affairs, the holders of Class B Shares are entitled to share in the proceeds pro rata with the holders of Class A Shares.

The Class B Shares are: (i) prohibited from becoming listed on a stock exchange or stock market; and (ii) non-transferrable, non-assignable, non-hedgeable and non-pledgable, except with the prior written consent of the Board.

The Class B Shares are convertible into Class A Shares in the following manner:

- a) automatically on the date that is 39 months following the IPO Date;
- b) at any time and at the option of the holder provided the holder executes and delivers to the Company a conversion notice and a Conversion Lock-up Agreement; and
- c) following a resolution of the Board authorizing the conversion of all of the Class B Shares and on the date designated in the resolution for such conversion.

Further, if the Class A Shares, the Class B Shares or the Class A Shares and the Class B Shares together, are the subject of a take-over bid (as defined in Multilateral Instrument 62-104 – *Take-Over Bids And Issuer Bids*) then the Class B Shares shall automatically convert to Class A Shares.

Subject to a resolution by the Board providing otherwise, holders of Class B Shares may only exercise the right of conversion to Class A Shares during the period having commenced on September 11, 2012 and ending on the date that is 39 months following the IPO Date if they have executed and delivered to the Company a conversion notice, and a Conversion Lock-up Agreement. See “*Corporate Structure of the Company – Reorganization*” for further details.

## Preferred Shares

The Company is also authorized to issue an unlimited number of Preferred Shares without nominal or par value. The Preferred Shares of Ivanhoe may be issued in one or more series and the Board is authorized to fix the number of shares in each series and to determine the designation, rights, privileges, restrictions and conditions attached to the shares of each series. The Preferred Shares of any series rank on parity with the Preferred Shares of every other series and are entitled to a priority over the Class A Shares, the Class B Shares, and any other class of shares ranking junior to the Preferred Shares with respect to the payment of dividends and in the event of the liquidation, dissolution or winding up of the Company or upon any distribution of the assets of the Company among its shareholders for the purpose of winding up its affairs.

## MARKET FOR SECURITIES

### Market

The Class A Shares were first sold to the public under a prospectus dated October 16, 2012 at C\$4.75 per Class A Share. The Class A Shares were listed on the TSX on October 23, 2012 under the symbol “IVP” which changed to “IVN” on September 3, 2013. The closing price of the Company’s Class A Shares on the TSX on March 28, 2014 was C\$1.78. The Class B Shares are not listed on any stock market or securities exchange.

### Trading Price and Volume

The following sets forth the high and low market prices and the volume of the Class A Shares traded on the TSX during the periods indicated (stated in Canadian dollars):

Month	High C\$	Low C\$	Volume
January, 2013	5.45	4.70	3,518,747
February, 2013	5.11	3.85	3,519,232
March, 2013	4.70	4.00	6,091,577
April, 2013	4.44	2.75	5,204,862
May, 2013	3.04	2.15	10,686,349
June, 2013	2.71	1.46	7,111,120
July, 2013	1.71	1.29	13,385,918
August, 2013	2.07	1.32	11,906,236
September, 2013	2.59	1.94	10,461,006
October, 2013	2.68	2.01	6,772,931
November, 2013	2.70	1.96	7,593,475
December, 2013	2.15	1.83	7,543,231
January, 2014	1.95	1.58	8,147,150
February, 2014	1.94	1.45	13,132,666
March, 2014 (1-28)	1.84	1.57	16,207,368

## Prior Sales

The following table sets forth certain information regarding the sale of Class A Shares during the period commencing 12 months prior to the date of this AIF. No Class B Shares were issued in this period.

Date of Issue	Number and Type of Securities	Issue Price Per Securities	Aggregate Issue Price	Nature of Consideration
February 28, 2014	34,000 Class A Shares <sup>(1)</sup>	\$1.33	\$45,220	Cash
December 13, 2013	100,000 Class A Shares <sup>(1)</sup>	\$1.33	\$133,333	Cash
December 13, 2013	783,500 Class A Shares <sup>(2)</sup>	\$1.86	N/A	BS
October 4, 2013	54,000,000 Class A Shares <sup>(3)</sup>	C\$2.00	C\$108,000,000	Cash
September 25, 2013	50,000 Class A Shares <sup>(1)</sup>	\$1.80	\$90,000	Cash
September 4, 2013	5,000 Class A Shares <sup>(1)</sup>	\$1.33	\$6,650	Cash
June 3, 2013	283,000 Class A Shares <sup>(1)</sup>	\$1.33	\$376,390	Cash
May 23, 2013	22,500 Class A Shares <sup>(4)</sup>	\$1.80	N/A	AER
May 17, 2013	33,000 Class A Shares <sup>(1)</sup>	\$1.33	\$43,890	Cash
April 12, 2013	4,214 Class A Shares <sup>(5)</sup>	\$2.40	N/A	AER
April 10, 2013	15,287 Class A Shares <sup>(6)</sup>	\$1.60	N/A	AER
April 9, 2013	152,511 Class A Shares <sup>(7)</sup>	\$1.60	N/A	AER
April 2, 2013	158,371 Class A Shares <sup>(8)</sup>	\$1.60	N/A	AER

Notes:

- (1) Represents Class A Shares issued upon the exercise of Options.
- (2) Represents 783,500 Class A Shares issued as a compensation award, bonus shares ("BS").
- (3) Represents 54,000,000 Class A Shares issued as a result of a private placement.
- (4) 100,000 Options were exercised via an alternative exercise right ("AER") resulting in the issuance of a net 22,500 Class A Shares.
- (5) 10,000 Options were exercised via an AER resulting in the issuance of a net 4,214 Class A Shares.
- (6) 25,000 Options were exercised via an AER resulting in the issuance of a net 15,287 Class A Shares.
- (7) 250,000 Options were exercised via an AER resulting in the issuance of a net 152,511 Class A Shares.
- (8) 250,000 Options were exercised via an AER resulting in the issuance of a net 158,371 Class A Shares.

## RESTRICTED SECURITIES

Certain holders of Class A Shares and all holders of Class B Shares are subject to a lock-up of their shares, pursuant to lock-up agreements, in the case of holders of Class A Shares or pursuant to the Reorganization, in the case of Class B Shares. The table below sets out the number of such securities that remain locked-up as of March 28, 2014, and describes the related lock-up provisions.

Designation of class <sup>(1)</sup>	Number of securities subject to a restriction on transfer	Percentage of outstanding Class A Shares
Class A Shares	272,933,692 <sup>(2)</sup>	46.70% <sup>(4)</sup>
Class B Shares	8,493,120 <sup>(3)</sup>	1.45% <sup>(4)</sup>

Notes:

- (1) Refers to class of security upon which the restriction on transfer is related.
- (2) Represents the aggregate of all outstanding Class A Shares which remain subject to the terms of a Conversion Lock-up Agreement. As of March 28, 2014, 204,412,186 Class A Shares have been released from lock-up.
- (3) Represents the aggregate of all outstanding Class B Shares. Class B Shares are convertible at any time at the option of the holder to Class A Shares for no additional consideration, but holders must execute a Conversion Lock-up Agreement. As of March 28, 2014, 414,653,127 Class B Shares have been converted into Class A Shares. After 39 months, all Class B Shares will be converted to Class A Shares and all the restrictions imposed by the Conversion Lock-up Agreements will have ceased. See "Corporate Structure of the Company – Reorganization" and "Description of Capital Stock – Class B Shares" for further details.
- (4) The percentage of Class A Shares provided in this column assumes the conversion of all Class B Shares into Class A Shares.

## DIRECTORS AND EXECUTIVE OFFICERS

The following table sets out the names and country and state or province of residence of the directors and executive officers of the Company, their present position(s) and offices with the Company, their principal occupations during the last five years and their holdings of Class A Shares or Class B Shares, as applicable, as at the date hereof.

The term of office of the directors expires annually at the time of the Company's annual shareholder meeting. The term of office of the Company's executive officers expires at the discretion of the Board.

<b>Name and Country of Residence</b>	<b>Position with the Company</b>	<b>Principal Occupation for Past Five Years<sup>(1)</sup></b>	<b>Number of Shares Owned Directly or Indirectly<sup>(1)(2)</sup></b>
<i>Directors</i>			
Robert M. Friedland Singapore	Executive Chairman and Director since November 2000.	Founder and Executive Chairman of Ivanhoe (November 2000 – present); Executive Chairman of the former Ivanhoe Mines Ltd. (now Turquoise Hill Resources Ltd.) (March 1994 – April 2012); Chief Executive Officer of the former Ivanhoe Mines Ltd. (now Turquoise Hill Resources Ltd.) (October 2010 – April 2012); Chairman of Ivanhoe Capital Corporation (January 1991 – present); President of Ivanhoe Capital Corporation (July 1988 – present); Founder and Executive Co-Chairman of Ivanhoe Energy Inc. (May 2008 – present); President of Ivanhoe Energy Inc. (May 2008 – May 2010); Chief Executive Officer of Ivanhoe Energy Inc. (May 2008 – December 2011); Deputy Chairman of Ivanhoe Energy Inc. (June 1999 – May 2008)	147,966,755 Class A Shares (25.32%)
Charles J. Russell Guernsey, Channel Islands	Director since July 2000 <sup>(3)(4)(5)</sup> .	Retired (June 1995 – present)	508,468 Class A Shares (0.09%)

Peter G. Meredith British Columbia, Canada	Director since May 1998 <sup>(9)</sup> .	Chairman of Kaizen Discovery Inc. (December 2013 – present); President and Chief Executive Officer, Global Mining Management Corporation (April 2006 – May 2013); Chairman of SouthGobi Resources Ltd. (October 2009 – September 2012); Chief Executive Officer of SouthGobi Resources Ltd. (June 2007 – October 2009); Deputy Chairman of the former Ivanhoe Mines Ltd. (now Turquoise Hill Resources Ltd.) (May 2006 - April 2012)	1,304,825 Class A (0.22%)	Shares
Dr. Markus Faber Chiangmai, Thailand	Director since August 2004 <sup>(7)</sup> .	Managing Director of Marc Faber Limited (June 1990 – present)	233,333 Class A (0.04%)	Shares
William G. Lamarque England, United Kingdom	Director since June 2006 <sup>(3)</sup> .	Managing Partner of Balor Capital Management LLC (October 2007 – present); President of Hanson Capital Asia Ltd. (February 2002 – present); Chief Executive Officer of Ecometals Limited (January 2011 – present)	177,335 Class A (0.03%)	Shares
William B. Hayden New South Wales, Australia	Director since March 2007 and May 1998 – September 2002 <sup>(8)</sup> .	President and Director of Ivanhoe Philippines, Inc. (July 2005 – December 2011); President of GoviEx Uranium Inc. (June 2010 – August 2011)	466,666 Class A (0.08%)	Shares
Oyvind Hushovd Norway	Director since September 2007 <sup>(6)(7)</sup> .	Director of Nyrstar B.V. (December 2009 - present); Director of Cameco Corporation (December 2003 – May 2013); Director of Inmet Mining Corporation (May 2002 – March 2013)	1,000,000 Class A (0.17%)	Shares
Guy J. de Selliers England, United Kingdom	Director since May 2011.	President of HCF International Advisers Ltd. (March 2003 – present)	Nil	

Ian Cockerill Gauteng, South Africa	Director since May 2011 <sup>(4)(10)</sup> . Lead Independent Director since May 2012.	Director of Endeavour Mining Corporation (September 2013 – present); Non-Executive Director and Vice Chairman of African Minerals Limited (July 2012 – present); Executive Director (March 2010 – July 2010), Executive Chairman (July 2010 – February 2013) and Non-Executive Chairman (February 2013 – present) of Petmin Limited; Non-Executive Director of Orica Limited (September 2010 – present); Non-Executive Chairman of Hummingbird Resources Ltd. UK (October 2009 – present); Chief Executive Officer of Anglo Coal (June 2008 – December 2009); Chief Executive Officer and Managing Director, Gold Fields Ltd. (May 2002 – April 2008)	Nil
Dr. Rilwanu Lukman Austria	Director since February 2012 <sup>(8)</sup> .	Principal of R. Lukman and Co. Limited (October 1991 – present)	Nil
<b><i>Executive Officers</i></b>			
Lars-Eric Johansson England, United Kingdom	President since May 2008 and Chief Executive Officer since May 2007.	Chief Executive Officer (May 2007 – present) and President (May 2008 – present) of Ivanhoe	3,048,386 Class A Shares (0.52%)
Martie (Marna) Cloete Gauteng, South Africa	Chief Financial Officer since December 2009.	Chief Financial Officer of Ivanhoe (December 2009 – present); Group Finance Manager of Ivanhoe (December 2008 – December 2009); Group Financial Accountant (July 2006 – December 2008) of Ivanhoe	32,298 Class A Shares (0.01%)
Michael Gray England, United Kingdom	Chief Operating Officer since April 2012.	Chief Operating Officer of Ivanhoe (April 2012 – present); Vice President of Stantec (July 2009 – December 2011); President and co-founder of McIntosh Engineering Inc. (April 1993 – June 2008)	53,763 Class A Shares (0.01%)
Steve Garcia Gauteng, South Africa	Executive Vice President and Chief Development Officer since February 2013.	Executive Vice President and Chief Development Officer of Ivanhoe (January 2013 – Present); Executive Vice President (October 2005 – November 2012) and Project Director (May 2005 – November 2012) of Turquoise Hill Resources Ltd.	81,204 Class A Shares (0.01%)

David Broughton British Columbia, Canada	Executive Vice President, Exploration since January 2008.	Executive Vice President, Exploration of Ivanhoe (January 2008 – present); Exploration Manager, Sediment-hosted Copper Deposits of Phelps Dodge Exploration Corp./Freeport Exploration (December 2006 – October 2007)	546,903 Class A Shares (0.09%)
B. Matthew Hornor British Columbia, Canada	Executive Vice President since December 2013.	Executive Vice President of Ivanhoe (December 2013 – present); Executive Vice President, Business Development and Legal of Ivanhoe (May 2010 – December 2013); Chairman of Beales Sàrl (February 2013 – present); Director of Beales Sàrl (September 2010 – present); President of Beales Sàrl (September 2010 – November 2012); Chief Executive Officer and Director of Kaizen Discovery Inc. (December 2013 – present); President of Kaizen Discovery Inc. (January 2014 – present); Managing Director, Japan, Ivanhoe Capital Corporation (August 2005 – present); Senior Vice President, Japan of Ivanhoe Energy Inc. (October 2009 – December 2013); Senior Strategic Advisor of GoviEx Uranium Inc. (February 2014 – present) Executive Vice President of GoviEx Uranium Inc. (September 2009 – February 2014); General Counsel of GoviEx Uranium Inc. (February 2007 – February 2014)	17,831 Class A Shares (<0.01%)

Notes:

- (1) The information as to principal occupation, business or employment of and shares beneficially owned, controlled or directed by a director or executive officer is not within the knowledge of the management of the Company and has been furnished by the respective parties.
- (2) The share holdings presented in this column exclude options, if any, held by such directors and officers and the percentage values are calculated to include, in the aggregate, the Class A Shares and the Class B Shares, without reference to any Class A Shares that may be issuable upon the exercise of options.
- (3) Member of the Audit Committee.
- (4) Member of the Nominating and Corporate Governance Committee.
- (5) Chair of the Sustainability Committee.
- (6) Chair of the Audit Committee.
- (7) Member of the Compensation and Human Resources Committee.
- (8) Member of the Sustainability Committee.
- (9) Chair of the Nominating and Corporate Governance Committee.
- (10) Chair of the Compensation and Human Resources Committee.

As at the date of this AIF, the Company's directors and executive officers as a group beneficially own, directly or indirectly, or exercise control or direction over an aggregate of 155,437,767 Class A Shares, representing 26.6% of the issued and outstanding Class A Shares and Class B Shares combined, and 27.0 % of the issued and outstanding Class A Shares, excluding any options held by such directors and officers. None of the Company's directors or executive officers beneficially owns Class B Shares.

## Cease Trade Orders, Bankruptcies, Penalties or Sanctions

To the knowledge of management, except as disclosed herein, no director or executive officer of the Company is, as of the date of this AIF, or was, within the 10 years before the date hereof, a director, chief executive officer or chief financial officer of any company (including Ivanhoe) that was the subject of a cease trade order, an order similar to a cease trade order or an order that denied the company access to any exemption under securities legislation that was in effect for a period of more than 30 consecutive days, that was issued: (i) while such person was acting in that capacity; or (ii) after such person was acting in such capacity and which resulted from an event that occurred while that person was acting in such capacity.

Lars-Eric Johansson served, from June 2004 to April 2006, as the Executive Vice-President and Chief Financial Officer of Kinross Gold Corporation, a reporting issuer in all of the Provinces of Canada. Kinross Gold Corporation was subject to a management cease trading order issued by the Ontario Securities Commission on April 1, 2005 for failure to file its annual financial statements in the prescribed time period. Kinross became current in its filings on February 22, 2006 and the management cease trading order was lifted on that date.

Mr. Lamarque serves as the Chief Executive Officer of Ecometals Limited ("**Ecometals**"). On October 3, 2013 a Cease Trade Order against Ecometals was issued by the British Columbia Securities Commission for failing to file its audited financial statements and associated filings for the year ending March 31, 2013. Ecometals has confirmed that it continues to work with its auditors to complete the filings as soon as its financial condition allows.

To the knowledge of management, except as disclosed herein, no director or executive officer of the Company, or shareholder holding a sufficient number of securities to affect materially the control of the Company is, as of the date of this AIF, or has been, within 10 years before the date hereof, a director or executive officer of any company that, while such person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets.

Mr. Cockerill was a non-executive director of Peterstow Holdings from August 2010 to March 2012. In August 2012, Peterstow Holdings applied for an order from the High Court in Swaziland to be placed under provisional liquidation. Mr. Cockerill is a minority shareholder of Peterstow Holdings, owning less than 1% of the issued and outstanding capital of the company.

Dr. Lukman was a director of MPF Corp., Ltd. from June 2007 through September 2008 at which time the company filed a voluntary petition for reorganization under Chapter 11 in the U.S. Bankruptcy Court for the Southern District of Texas, in joint administration with MPF Holding U.S. LLC. During the time that Dr. Lukman was a member of the board, no board meetings were held and Dr. Lukman received no fees from the company.

Mr. William Lamarque was a director of Century Mining Corporation ("**Century**") until it was purchased through a statutory plan of arrangement by White Tiger Gold Ltd. ("**White Tiger**") in October 2011. On May 25, 2012, White Tiger announced that Century had received a notice from Deutsche Bank AG, London Branch, that it was in breach of certain contractual commitments and that Deutsche Bank would be enforcing its security on the property of Century.

To the knowledge of management, no director or executive officer of the Company, or shareholder holding a sufficient number of securities to affect materially the control of the Company has, within the



10 years before the date of this AIF, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder.

To the knowledge of management, no director or executive officer of the Company, or shareholder holding a sufficient number of securities to affect materially the control of the Company has been subject to any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority, or has been subject to any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

### **Conflicts of Interest**

To the best of the Company's knowledge, except as otherwise noted in this AIF, there are no existing or potential conflicts of interest among the Company, its directors, officers, or other members of management of the Company except that certain of the directors, officers and other members of management serve as directors, officers and members of management of other public companies and therefore it is possible that a conflict may arise between their duties as a director, officer or member of management of such other companies and their duties as a director, officer or member of management of the Company.

The directors and officers of the Company are aware of the existence of laws governing accountability of directors and officers for corporate opportunity and requiring disclosure by directors and officers of conflicts of interest and the Company will rely upon such laws in respect of any directors' or officers' conflicts of interest or in respect of any breaches of duty to any of its directors and officers. All such conflicts must be disclosed by such directors or officers in accordance with the BCBCA.

The Company has adopted a Code of Business Conduct and Ethics that applies to all directors, officers, employees and consultants of the Company and its subsidiaries.

### **LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

Since January 1, 2013, there have been no legal proceedings to which the Company is or was a party or of which any of its property is or was the subject of that involves claims for damages that exceeds 10% of the Company's current assets. The Company has received demand letters in the past from parties claiming rights with respect to the Company or its assets. In each case the claimants have not commenced any legal proceedings in respect of their demands and the Company views the claims as without merit.

Since incorporation, there have not been any penalties or sanctions imposed against the Company by a court relating to provincial and territorial securities legislation or by a securities regulatory authority, nor have there been any other penalties or sanctions imposed by a court or regulatory body against the Company, and the Company has not entered into any settlement agreements before a court relating to provincial and territorial securities legislation or with a securities regulatory authority.

### **AUDIT COMMITTEE INFORMATION**

#### **Audit Committee Charter**

The charter of the Audit Committee is attached as Schedule "B" to this AIF.

## Composition of the Audit Committee and Independence

The Audit Committee is comprised of Oyvind Hushovd (Chair), Charles Russell, and William Lamarque, each of whom is “independent” within the meaning of NI 52-110.

## Relevant Education and Experience

Each of Oyvind Hushovd (Chair), Charles Russell, and William Lamarque, are “financially literate” within the meaning of NI 52-110. Each of the members of the Audit Committee has had several years of experience as a senior executive and a member of the board of directors of significant business enterprises in which he has assumed substantial financial and operational responsibility. In the course of these duties, the members have gained a reasonable understanding of the accounting principles used by the Company; an ability to assess the general application of such principles in connection with the accounting for estimates, accruals and reserves; experience analyzing and evaluating financial statements that present a breadth and level of complexity of issues that can reasonably be expected to be raised by the Company’s financial statements, or experience actively supervising one or more individuals engaged in such activities; and an understanding of internal controls and procedures for financial reporting.

## Audit Committee Oversight

At no time since incorporation was a recommendation of the Audit Committee to nominate or compensate an external auditor not adopted by the Board.

## Pre-Approval Policies and Procedures

All non-audit services must be pre-approved by the Audit Committee. In no event can the external auditor undertake non-audit services prohibited by legislation or by professional standards.

## External Auditor Service Fees

The following table provides information about the fees billed to the Company, for professional services rendered by Deloitte LLP (formerly Deloitte & Touche LLP), Chartered Accountants, during the financial years ended December 31, 2013 and 2012:

<b>Deloitte LLP</b>	<b>2013</b>	<b>2012</b>
	(C\$)	(C\$)
Audit Fees <sup>(1)</sup>	272,000	316,500
Audit Related Fees <sup>(2)</sup>	135,000	290,000
Tax Fees <sup>(3)</sup>	—	—
All Other Fees <sup>(4)</sup>	30,800	15,000
<b>Total:<sup>(5)</sup></b>	<b>437,800</b>	<b>621,500</b>

Notes:

- (1) Audit fees were for professional services rendered by the Company’s auditors for the audit of the Company’s annual consolidated financial statements.
- (2) Audit related fees were for services related to limited procedures performed by the Company’s auditors related to interim reports as well as services provided in connection with statutory and regulatory filings, including without limitation the IPO occurring in 2012.
- (3) Tax fees are for tax compliance, tax advice and tax planning.
- (4) All other fees for services performed by the Company’s auditors.
- (5) These fees only represent professional services rendered and do not include any out-of-pocket disbursements or fees associated with filings made on the Company’s behalf. These additional costs are not material as compared to the total professional services fees for each year.

## **INTERESTS OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

In May 2007, the Company subscribed for common shares in the capital of Rhenfield Limited, a British Virgin Islands registered company, constituting a 50% interest in Rhenfield Limited at the nominal value of the shares \$522 (£252). The other 50% interest is held by Ivanhoe Capital Pte Ltd., a company which has a director in common with Ivanhoe and which is 100% owned indirectly by the Executive Chairman. Rhenfield Limited initially purchased a building in London, England for \$11.6 million (£7.0 million) that was partly funded via a loan from both shareholders of \$1.7 million each (£1.05 million each) as well as a mortgage bond of \$8.1 million (£4.9 million). In June 2013, Rhenfield Limited acquired a second building in London, England for \$5.9 million (£3.6 million) that was partly funded via a loan from both shareholders of \$1.5 million each (£0.9 million each) as well as a mortgage bond of \$2.8 million (£1.7 million). The shareholders of Rhenfield Limited further funded transaction costs, capital improvements and operating costs on a 50:50 basis. The building is being partly used as the London office of the Company. The 50% interest in Rhenfield Limited is accounted for using the equity basis according to the Company's joint operation accounting policy.

Ivanhoe Mines Ltd., now Turquoise Hill Resources Ltd., subscribed for \$15 million of the 2011 Pre-IPO Bonds. At the time of the transaction, Robert Friedland and Peter Meredith, who are directors of the Company, were directors and executive officers of Ivanhoe Mines Ltd. (now Turquoise Hill Resources Ltd.). As at the date of this AIF, Mr. Friedland and Mr. Meredith no longer serve in such roles for Turquoise Hill Resources Ltd.

The Company is a party to a cost sharing agreement with Ivanhoe Energy Inc. (TSX; NASDAQ), Kaizen Discovery Inc. (TSX-V), Ivanhoe Capital Corporation, GoviEx Uranium Inc. and I-Pulse Inc. Except for GoviEx Uranium Inc., Mr. Friedland, Executive Chairman of the Company, has a material direct or indirect beneficial interest in these companies. Through these agreements, the Company shares, on a cost-recovery basis, office space, furnishings, equipment and communications facilities in Vancouver, Singapore and London. The Company also shares the costs of employing administrative and certain management personnel in these offices. In 2013, the Company's share of these costs was \$5.8 million. In 2001, the Company agreed, as part of the cost sharing arrangements and in connection with Mr. Friedland's position as the Executive Chairman, to share the costs of operating an aircraft owned by a private company of which Mr. Friedland is the sole shareholder. The Company paid \$1.2 million towards aircraft operating costs in 2013.

In October 2013, Mr. Friedland, the Executive Chairman of the Company, subscribed for an aggregate of 12,500,000 Class A Shares in a private placement for gross proceeds to the Company of C\$25 million. The private placement was completed in reliance on available exemptions from the formal valuation and minority shareholder approval requirements contained in Multilateral Instrument 61-101.

## **TRANSFER AGENTS AND REGISTRARS**

The transfer agent and registrar for the Class A Shares and Class B Shares is CST Trust Company at its offices in Vancouver and Toronto.

## MATERIAL CONTRACTS

The only material contracts entered into by the Company or on its behalf, since December 31, 2013 or entered into prior to December 31, 2013 and which are still in force, other than contracts entered into in the ordinary course of business, are:

1. Joint Operation and Investment Agreement. See “*Material Contracts - Itochu Investment*”;
2. Kipushi Joint Venture Agreement. See “*Material Contracts – Kipushi Joint Venture Agreement*”; and
3. SNEL Finance Agreement. See “*Material Contracts - SNEL Finance Agreement*”.

Copies of these agreements may be inspected at the head office of the Company located at 654 – 999 Canada Place, Vancouver, British Columbia, V6C 3E1, and will also be filed via SEDAR and available at [www.sedar.com](http://www.sedar.com).

### **Itochu Investment**

Itochu acquired its participating interest in the Platreef Project in two separate investments, each of which was made directly into Beales Sàrl (the subsidiary through which Ivanhoe holds its rights to the Platreef Project). In the first equity financing, Itochu invested \$10 million and acquired a 2% participating interest in the Platreef Project. The parties agreed that the proceeds would primarily be used to complete an in-fill drilling program on the Platreef Project. Itochu’s first investment in the Platreef Project closed in September 2010.

In May 2011, Ivanhoe and Itochu completed the negotiation of an additional investment in the Platreef Project by way of a Joint Operation and Investment Agreement by and among Ivanhoe, Itochu, ITC Platinum and Beales Sàrl. ITC Platinum is owned by a consortium of Itochu, the state-owned JOGMEC and JGC, a global engineering company. Pursuant to the Joint Operation and Investment Agreement, Itochu and its consortium partners acquired an additional 8% participating interest in the Platreef Project for 22.4 billion Japanese Yen (approximately \$280 million), through an equity investment in Beales Sàrl. The transaction closed in June 2011, and the parties agreed that the proceeds of the investment would be used solely to satisfy the direct costs and expenses of the Platreef Project, including the payment of a management fee equal to 3% of the recoverable costs, as such term is defined in the Joint Operation and Investment Agreement, to Ivanhoe (or its nominee) as the manager of the Platreef Project. Further, Itochu, JOGMEC and JGC participate in the Platreef Project’s joint technical committee.

In June 2013, the Company exchanged 8% of its interest in Platreef Resources for an 8% interest in Beales Sàrl. In accordance with this transfer, claims on the loan payable by Platreef Resources to Beales Sàrl were ceded and assigned to ITC Platinum to the value of \$28 million, which was equal to 8% of the loan payable by Platreef Resources to Beales Sàrl and 8% of Beales Sàrl’s cash and cash equivalents balance at the date of the transfer. The cession of the loan was done in order to place ITC Platinum in the same position as if their initial investment had been in Platreef Resources.

The transaction increased Ivanhoe’s effective shareholding in Beales Sàrl to 98%, while the effective shareholding in Platreef Resources remained 90%. The loan is repayable only once Platreef Resources has residual cashflow, which is defined in the loan agreement as gross revenue generated by Platreef Resources, less all operating costs attributable thereto, including all mining development and operating costs. The loan attracts interest of LIBOR plus 2% calculated monthly in arrears. Interest is not capitalized.

In partial consideration for their respective participating interests, Itochu and ITC Platinum have agreed to use reasonable efforts to arrange for and facilitate non-recourse project financing and support from Japanese financial institutions for the continued development of the Platreef Project. Ivanhoe anticipates that the Platreef Project, with support from its Japanese partners, will seek and potentially qualify for Japanese government supported financing in light of the importance to Japan of promoting the overseas acquisition and development of strategic natural resources, and the long-standing Japanese policy of supporting Japanese firms engaged in these activities.

In order to obtain mining rights in respect of the Platreef Project under South African mining laws, the Company must comply with the BEE and socio-economic objectives of the MPRDA. In light of the foregoing, Itochu and ITC Platinum are entitled to anti-dilution protection, without requiring the contribution of further funds, solely in respect of any BEE-related investment. These anti-dilution protections do not operate to excuse Itochu or ITC Platinum from their respective obligations to contribute additional funding in proportion to their respective participating interests in the Platreef Project, as may be required pursuant to cash call notices delivered by Ivanhoe (or its nominee), as the manager of the Platreef Project. As a result of the structuring arrangements related to this anti-dilution right, Itochu holds the legal interest in an additional 0.7% in the share capital of Beales Sàrl, which Itochu holds for the benefit of Ivanhoe.

In addition to the limited anti-dilution protection noted above, the Joint Operation and Investment Agreement provides for, among other things, additional investment protections for Itochu and ITC Platinum such as:

- a right of first offer to acquire all or any portion of those shares in Beales Sàrl or in Platreef Resources that may be transferred or sold by Ivanhoe or Beales Sàrl, subject to customary exceptions and an aggregate ownership cap of 12%, above which the exercise of such right is subject to the Company's written consent;
- certain tag-along rights to participate with Ivanhoe in the sale of its participating interest in the Platreef Project, subject to the terms and conditions set forth in the Joint Operation and Investment Agreement; and
- a right to convert their shares in Beales Sàrl (or in Platreef Resources to the extent owned by either Itochu or ITC Platinum) into Class A Shares following: (i) a breach of the Joint Operation and Investment Agreement by Ivanhoe that remains uncured for more than 180 days following notice of the breach; or (ii) the occurrence of certain specified insolvency events relating to the Company.

The parties have agreed to a best efforts negotiation of the terms of a definitive off-take agreement prior to first production from the Platreef Project. However, if the parties are unable to conclude an off-take agreement, Itochu and ITC Platinum nevertheless have the right to purchase a share of concentrate, matte and other products from the Platreef Project, at commercial rates, in proportion to their respective participating interests in the Platreef Project at the time of production.

The Joint Operation and Investment Agreement also contains customary terms for an agreement of this nature, including the formation of joint management and technical committees in respect of the Platreef Project, a right of first refusal in favour of Ivanhoe with respect to shares in Beales Sàrl offered for sale by Itochu or ITC Platinum, subject to certain exemptions, cash call provisions for the continued funding of the Platreef Project (and standard dilution provisions in the event of a cash call not being met by either party), customary representations and warranties from the parties, and dispute resolution and liability limitation provisions.

## **Kipushi Joint Venture Agreement**

The operation of KICO, relating in particular to the rights and responsibilities for the Kipushi Project, are governed by the Kipushi Joint Venture Agreement originally entered into by Gécamines and United Resources AG on February 14, 2007. The Kipushi Joint Venture Agreement was novated to Kipushi Vendor by United Resources AG via a novation act on May 16, 2008 and Kipushi Vendor replaced United Resources AG as a party to the Kipushi Joint Venture Agreement. At the time of Ivanhoe's acquisition of 68% of the share capital of KICO, in November 2011, Kipushi Vendor transferred its interest in the Kipushi Joint Venture Agreement to Kipushi Holding concurrent with the sale of shares in the capital of KICO.

The Kipushi Joint Venture Agreement:

- obligates Kipushi Holding to prepare and deliver to Gécamines a Feasibility Study for commencement of mineral production at the Kipushi Project no later than December 31, 2014, with up to an extra six month grace period if Kipushi Holding can demonstrate that it is not objectively able to deliver the Feasibility Study within that time. The Feasibility Study should target a production rate of 143,000 tpa of zinc concentrate, subject to adjustment as determined in the Feasibility Study;
- establishes that Gécamines' 32% shareholding is non-diluting and that Gécamines receives a royalty of 2.5% of net turnover;
- provides that all shareholder decisions are taken by simple majority decision regardless of the number of shares held except for changes in the articles of association which require a 75% vote and dividends in specie of product, changes to the objects clause or change to the nationality of KICO, which changes require a unanimous vote;
- provides that shares in KICO are not transferable before the date of commercial production and that, save for transfers between the shareholders or to their affiliates, pre-emption rights will apply to transfers of shares at an agreed price or, failing agreement, a price determined by an expert. There are provisions that a change in control of a shareholder will trigger pre-emption rights as if a transfer had been made. Gécamines has confirmed that completion by Ivanhoe of a stock exchange listing would not in any event constitute a change in control for such purposes;
- establishes a board of directors and management committee each comprising 7 members of which Kipushi Holding is entitled to appoint four members and Gécamines three members. The Chief Executive Officer, Chief Financial Officer, Chief Operating Officer and Sales and Marketing director are appointed by Kipushi Holding and the Deputy Chief Executive Officer, Human Resources director and Supply director are appointed by Gécamines;
- retains for Gécamines ownership of two concentrators located on site, a tailings facility and other buildings and infrastructure, and acknowledges the right of Gécamines to continue to use those facilities to process mineralized material from other properties; and
- establishes protocols for future financing, which obligate Kipushi Holding to finance 20% of finance costs for the project through interest-free advances. The parties agreed that the balance of the financing would be financed through commercial borrowings at LIBOR plus 400 basis points or as otherwise agreed between them.

## **SNEL Finance Agreement**

On March 21, 2014, a financing agreement was entered into between Ivanhoe's subsidiary, Ivanhoe Mines Energy DRC SPRL and La Société Nationale d'Electricité SARL ("**SNEL Finance Agreement**") relating to the upgrade at a first stage of two existing hydroelectric power plants in DRC - Mwadingusha and Koni, to feed up to 113 MW into the national power supply grid and for the supply of electricity to Ivanhoe's DRC projects. (See "*Kamoa Project – Preliminary Economics - Infrastructure, Capital and Operating Costs*").

Under the SNEL Finance Agreement, Ivanhoe has agreed to provide a loan (the "**Ivanhoe Mines Energy SNEL Loan**") relating to the power upgrade, which is estimated to be \$141 million (including a \$4.5 million pre-finance loan). The final loan size will be determined upon the completion of supplementary feasibility studies underway for the rehabilitation of the Nzilo hydropower plant, but is capped at a maximum commitment of \$250 million. The term for repayment of the Ivanhoe Mines Energy SNEL Loan and payment of accrued interest and future costs is estimated to be 15 years, beginning after the expiry of a two year grace period from the signing date of the agreement. The actual repayment period will ultimately depend on the amount actually financed and on the amounts deducted from electricity bills based on a fixed percentage of the actual bill as per the terms of the loan repayment. The parties have agreed a potential loan repayment schedule with repayments extending from 2015 to 2031 depending on drawn down dates. Following the upgrade, SNEL has the option to prepay the Ivanhoe Mines Energy SNEL Loan. The interest rate is 6 month LIBOR + 3%.

Under the SNEL Finance Agreement, Ivanhoe is given a priority electricity right by which SNEL commits to make available to Ivanhoe Mines Energy DRC SPRL, as per an agreed power requirements schedule, sufficient energy from its grid to meet the energy needs of Ivanhoe's DRC projects, and following the upgrade, on an exclusivity and priority basis, up to 200 MW depending on the Company's production and mine expansion scenarios. In the event Ivanhoe is not going to develop its DRC projects and thus not able to use power allocated to it, the unused electricity can be sold to a third party user and 40% of the proceeds of that sale will be used towards the repayment of the Ivanhoe Mines Energy SNEL Loan. Ivanhoe will pay SNEL for the supply by SNEL of the electricity required for the development and operation of its DRC Projects. These funds will be credited in an onshore account held by SNEL. Within 3 business days, 40% of these funds will be credited and used towards the servicing of the Ivanhoe Mines Energy SNEL Loan.

If a force majeure event occurs prior to the completion of the upgrade and continues for more than twelve (12) months, termination is possible following a determination by the parties that the upgrade may not be completed within one (1) year. An event of force majeure does not relieve SNEL from its obligation to service / pay the Ivanhoe Mines Energy SNEL Loan.

## **INTERESTS OF EXPERTS**

### **Names of Experts**

Deloitte LLP (formerly Deloitte & Touche LLP), Chartered Accountants, have advised that they are independent of the Company within the meaning of the Rules of Professional Conduct of the Institute of Chartered Accountants of British Columbia.

The scientific and technical information in this AIF regarding the Projects referred to in the “Description of the Business” section is based on the:

- technical report dated November 15, 2013 prepared by AMC Consultants, AMEC, Stantec Inc., Golder Associates, SRK Consulting Inc., and Hatch Ltd covering the Company’s Kamoia Project;
- technical report dated March 25, 2014 prepared by OreWin Pty Ltd, AMEC, Stantec Inc., SRK Consulting Inc., Metallicon Process Consulting (Pty) Ltd., and Geo Tail (Pty) Limited covering the Company’s Platreef Project; and
- revised technical report dated September 27, 2012 prepared by IMC Group Consulting Limited covering the Company’s Kipushi Project.

### **Interests of Experts**

To the knowledge of the Company, as of the date hereof, none of Deloitte LLP, AMC Consultants, AMEC, SRK Consulting Inc., Stantec, Hatch Ltd, Golder Associates, OreWin Pty Ltd, Metallicon Process Consulting (Pty) Ltd., Geo Tail (Pty) Limited or IMC Group Consulting Limited or any of their “designated professionals” as defined in NI 51-102, hold any beneficial interest in, directly or indirectly, Class A Shares, or securities convertible into Class A Shares, equal to or greater than one percent of the issued and outstanding Class A Shares.

## **ADDITIONAL INFORMATION**

Additional information including directors’ and officers’ remuneration and indebtedness, principal holders of the Company’s securities and options to purchase Class A Shares of the Company will be contained in the management proxy circular to be filed in connection with the annual and special meeting of Shareholders, currently scheduled to be held on May 5, 2014, which is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Company’s website at [www.ivanhoemines.com](http://www.ivanhoemines.com). Additional financial information is contained in the Company’s consolidated financial statements and MD&A as at and for the period ended December 31, 2013 and 2012 and available on SEDAR at [www.sedar.com](http://www.sedar.com). Additional information relating to the Company may be found on SEDAR at [www.sedar.com](http://www.sedar.com).



## SCHEDULE “A”

### INTERPRETATION

#### Defined Terms

Certain terms are limited to one section of the AIF and are defined directly in the body of the AIF. Other terms are used throughout, and are defined as follows:

“**2011 Pre-IPO Bonds**” has the meaning ascribed thereto under the heading “*General Development of the Business - Three Year History*”;

“**2012 Pre-IPO Bonds**” has the meaning ascribed thereto under the heading “*General Development of the Business - Three Year History*”;

“**AIF**” has the meaning ascribed thereto under the heading “*Forward-Looking Statements*”;

“**AMEC**” collectively means the entities of AMEC GRD SA, AMEC Australia Pty Ltd, and AMEC E&C Services Inc, which are affiliated companies that supply consultancy, engineering and project management services internationally;

“**Atlatsa**” means Atlatsa Resources Corporation, a company incorporated under the laws of British Columbia (formerly Anooraq Resources Corporation);

“**BCBCA**” means the *Business Corporations Act* (British Columbia) and the regulations in effect thereunder;

“**Beales Sàrl**” means Beales Sàrl, a company incorporated in accordance with the laws of the British Virgin Islands, and a majority owned subsidiary of Ivanhoe through which Ivanhoe holds its rights to the Platreef Project;

“**BEE**” means the process pursuant to which the government of South Africa is attempting to provide HDSA with access to property, business opportunities and other benefits generated by the South African economy through the implementation of statutes aimed specifically at the advancement of HDSA and HDSA communities;

“**Board**” means the board of directors of Ivanhoe;

“**Class A Shares**” means the Class A common shares in the capital of the Company;

“**Class B Shares**” means the Class B common shares in the capital of the Company;

“**Company**” has the meaning ascribed thereto under the heading “*Forward-Looking Statements*”;

“**Conversion Lock-up Agreement**” means a lock-up agreement to be entered into by the Company with each of the holders of Class B Shares who elect to do so, which, among other things, shall restrict transfers of the Class A Shares acquired on conversion of Class B Shares to a staged release of such Class A Shares during the Lock-up Period and which will be in the form approved by the Board from time to time;

“**Disposition**” means any offer of sale, contract to sell or otherwise to dispose of, transfer, gift, assign, encumber, convert, loan, pledge or grant any rights to, or to enter into any hedging arrangements with respect to issued Class A Shares;

“**DMR**” means the South African Department of Mineral Resources;

“**DRC**” means the Democratic Republic of the Congo;

“**DRC Mining Code**” means the Law No. 007/2002 of July 11, 2002 introduced by the government of the DRC;

“**FPL**” means Fleurette Properties Limited, a company associated with Dan Gertler and incorporated under the laws of Gibraltar;

“**Gécamines**” means La Générale des Carrières et des Mines, a state-owned corporation, incorporated in the DRC;

“**Genalysis**” means Genalysis Laboratory Services (Proprietary) Limited, a private company with limited liability registered in accordance with the laws of South Africa;

“**HDSA**” means Historically Disadvantaged South Africans, as defined in the MPRDA;

“**IPO**” means initial public offering of 64,358,000 Class A Shares at a price of C\$4.75 per Class A Share;

“**IPO Date**” means October 23, 2012, being the date on which the IPO was completed;

“**ITC Platinum**” means ITC Platinum Development Ltd., a special purpose vehicle organized under the laws of the United Kingdom and owned by a consortium of Itochu, the state-owned JOGMEC and JGC;

“**Itochu**” means the Itochu Corporation, a corporation incorporated under the laws of Japan;

“**Ivanhoe**” means Ivanhoe Mines Ltd., formerly Ivanplats Limited;

“**JGC**” means JGC group of companies, consisting of the main company, JGC, which provides a wide range of services in the planning, design engineering, construction, and commissioning of various kinds of plants and facilities, and another 41 subsidiary, and 32 affiliated, companies in Japan and abroad, which through its ownership in ITC Platinum holds an indirect 0.5% participating interest in the Platreef Project;

“**JOGMEC**” means Japan Oil, Gas and Metals National Corporation, a company incorporated under the laws of Japan, which was created to integrate the functions of the former Japan National Oil Corporation (responsible for securing a stable supply of oil and natural gas) and the former Metal Mining Agency of Japan (responsible for ensuring a stable supply of non-ferrous metal and mineral resources and implementing mine pollution control measures), which through its ownership in ITC Platinum holds an indirect 1.5% participating interest in the Platreef Project;

“**Joint Operation and Investment Agreement**” means the joint operation and investment agreement between Itochu, ITC Platinum, Beales Sàrl and Ivanhoe dated May 26, 2011;

“**Kamoa Copper**” means Kamoa Copper SPRL, a company registered in the DRC, a wholly-owned indirect subsidiary of Ivanhoe;

“**Kamoa Exploitation Licences**” has the meaning ascribed thereto under the heading “*General Development of the Business - Three Year History*”;

“**Kamoa Project**” means the Company’s copper project located in Katanga Province, DRC, and which lies at the western end of the Central African Copperbelt;

**“Kamoa Technical Report”** means the technical report dated November 15, 2013 prepared by AMC Consultants, AMEC, SRK Consulting Inc., Hatch Ltd, Golder Associates and Stantec, covering the Company’s Kamoa Project;

**“KICO”** means Kipushi Corporation S.P.R.L., a corporation incorporated under the laws of the DRC;

**“Kipushi Holding”** means Kipushi Holding Limited, incorporated under the laws of Barbados, a wholly owned indirect subsidiary of Ivanhoe and the subsidiary through which the Company holds its rights to the Kipushi Project;

**“Kipushi Joint Venture Agreement”** has the meaning ascribed thereto under the heading *“Description of the Business - Kipushi Project”*;

**“Kipushi Project”** means the Company’s zinc-copper project located near the town of Kipushi, DRC;

**“Kipushi Technical Report”** means the revised technical report dated September 27, 2012 prepared by IMC Group Consulting Limited covering the Company’s Kipushi Project;

**“Kipushi Vendor”** means Kipushi Resources International Limited, a company associated with Dan Gertler and incorporated under the laws of the Cayman Islands;

**“Lock-up Period”** means the period that begins on the date the respective Conversion Lock-Up Agreement is executed and ends on the date that is three years and three months (39 months) following the IPO Date;

**“Lock-up Shareholders”** means, during the Lock-up Period, a holder of Class A Shares that received such Class A Shares on the conversion of their Class B Shares and the concurrent execution of a Conversion Lock-up Agreement;

**“Macalacaskop”** means the farm Macalacaskop No. 243, Registration Division KR, in the Limpopo Province of South Africa; being one of the three contiguous properties which currently comprise the Platreef Project;

**“MPRDA”** means the *Mineral and Petroleum Resources Development Act, No. 28 of 2002* (South Africa), as amended from time to time, and includes the Regulations published pursuant thereto;

**“NI 43-101”** means National Instrument 43-101 – *Standards of Disclosure for Mineral Projects*;

**“NI 52-110”** means National Instrument 52-110 – *Audit Committees*;

**“Options”** mean options to purchase Class A Shares pursuant to either: (i) those individual stock option agreements entered into by the Company with certain of its directors, officers, employees and consultants; or (ii) the amended and restated employees’ and directors’ equity incentive plan of the Company, and **“Option”** refers to one option individually;

**“Original Common Shares”** means the common shares of the Company, as they were prior to the Reorganization, and which have since been reclassified as Class B Shares, having new rights, terms and conditions attached to them;

**“Platreef Project”** means those deposits of PGE-nickel-copper-gold mineralization, in the northern limb of the Bushveld Complex, located on the contiguous Turfspruit, Macalacaskop and Rietfontein properties, approximately 280 km northeast of Johannesburg, South Africa held 90% by Ivanhoe, subject to any interest of Atlatsa, pursuant to the Settlement and New Project Agreement. See *“Description of the Business - Platreef Project”*;

**“Platreef Resources”** means Platreef Resources Proprietary Limited, a private company incorporated in accordance with the laws of South Africa, a majority owned subsidiary of Beales Sàrl and the subsidiary through which Ivanhoe holds its rights to the Platreef Project;

**“Platreef Technical Report”** means the technical report effective March 25, 2014 prepared by OreWin Pty Ltd, AMEC, SRK Consulting Inc., Stantec, Metallicon Process Consulting (Pty) Ltd., and Geo Tail (Pty) Limited covering the Company’s Platreef Project;

**“Pre-IPO Bonds”** has the meaning ascribed thereto under the heading *“General Development of the Business – Three Year History”*;

**“Preferred Shares”** mean the preferred shares in the capital of the Company issuable in series;

**“Preliminary Economic Assessment”** means that portion of the Kamoa Technical Report or the Platreef Technical Report which would constitute a Preliminary Economic Assessment which is a study, other than a Pre-Feasibility Study or Feasibility Study, that includes an economic analysis of the potential viability of Mineral Resources;

**“Projects”** mean collectively, the Kamoa Project, Platreef Project and Kipushi Project and “Project” refers to one of the Projects individually;

**“QA/QC”** means quality assurance and quality control;

**“Qualified Person”** means an individual who is a “Qualified Person” or “QP” within the meaning of NI 43-101;

**“Reorganization”** means the reorganization of Ivanhoe approved by its shareholders at a shareholders’ meeting on May 26, 2011, which amongst other things, resulted in the reclassification of Original Common Shares as Class B Shares;

**“Restitution of Land Rights Act”** means the *Restitution of Land Rights Act, No. 22 of 1994* (South Africa) as amended from time to time and includes the regulations published pursuant thereto;

**“Rietfontein”** means the farm Rietfontein Number 2, Registration Division KS, in the Limpopo Province of South Africa; being one of the three contiguous properties which currently comprise the Platreef Project;

**“Rietfontein Right”** means the exclusive right held by Plateau Resources Limited, a company incorporated under the laws of South Africa, being a subsidiary of Atlatsa, to prospect for base and precious metals on Rietfontein under prospecting right LP30/5/111/2/740PR;

**“SEDAR”** means the System for Electronic Document Analysis and Retrieval operated by the securities regulatory authorities in each of the provinces and territories of Canada;

**“Settlement and New Project Agreement”** means the Settlement and New Project Agreement between Ivanhoe and Atlatsa, dated December 11, 2009;

**“SNEL”** means La Société Nationale d’Electricité SARL, the state owned power company of the DRC;

**“SNEL Finance Agreement”** means the SNEL finance agreement between Ivanhoe Mines Energy DRC SPRL and La Société Nationale d’Electricité SARL dated March 21, 2014;

**“Technical Reports”** has the meaning ascribed thereto under the heading *“Definitions and Other Information – Scientific and Technical Information”*;

“**TSX**” means the Toronto Stock Exchange;

“**Turfspruit**” means the farm Turfspruit No. 241, Registration Division KS, in the Limpopo Province of South Africa; being one of the three contiguous properties which currently comprise the Platreef Project;

“**Underwriters**” means, collectively, BMO Nesbitt Burns Inc., Morgan Stanley Canada Limited, Macquarie Capital Markets Canada Ltd., RBC Dominion Securities Inc., CIBC World Markets Inc., Citigroup Global Markets Canada Inc., Renaissance Securities (Cyprus) Limited and UBS Securities Canada Inc.;

“**Underwriting Agreement**” means the underwriting agreement, dated October 15, 2012, amongst the Company and the Underwriters; and

“**U.S.**” or “**United States**” mean the United States of America, its territories or possessions, any state of the United States and the District of Columbia.

## GLOSSARY OF MINING TERMS AND ABBREVIATIONS

“**AMK**” means one of the open-pit deposits of the Platreef Project located in the southern basin (an extension of the Turfspruit Basin) at Macalacaskop;

“**ATS**” means one of the open-pit deposits of the Platreef Project located at Turfspruit/Rietfontein;

“**azimuth**” means the direction of one object from another, usually expressed as an angle in degrees relative to true north. Azimuths are usually measured in the clockwise direction, thus an azimuth of 90° indicates that the second object is due east of the first;

“**Bushveld Complex**” means the Bushveld Igneous Complex, the layered igneous intrusion located in South Africa, which is one of the largest differentiated igneous bodies on earth, containing major deposits of PGEs, chromium and vanadium;

“**Central African Copperbelt**” means the copper mining area of Central Africa which runs through Zambia (Copperbelt Province) and the DRC (Katanga Province);

“**chromite**” means an iron chromium oxide mineral belonging to the spinel group and commonly described using the chemical formula  $\text{FeCr}_2\text{O}_4$ . Other elements such as aluminum, nickel and magnesium may substitute for iron in the spinel;

“**comminution/crushing/grinding**” means crushing and/or grinding of ore by impact and abrasion. Usually, the word “crushing” is used for dry methods and “grinding” for wet methods. Also, “crushing” usually denotes reducing the size of coarse rock while “grinding” usually refers to the reduction of the fine sizes;

“**concentrate**” means the valuable product from mineral processing, as opposed to the tailing, which contains the waste minerals. The concentrate represents a smaller volume than the original ore;

“**concentrator**” means a group of buildings, in which a process or function is carried out; at a mine it will typically include warehouses, hoisting equipment, compressors, repair shops, offices and mill and/or floatation cells;

“**cut-off grade**” means a grade level below which the mineralized material is not considered to be economic to mine and process. The minimum grade used to establish Mineral Resources;

“**decline**” means a sloping underground opening for machine access from level to level or from the surface;

“**density**” means the mass per unit volume of a substance, commonly expressed in grams per cubic centimetre;

“**diamictite**” means a poorly or non-sorted, matrix-rich conglomerate or breccia with a wide range of clasts up to 25% of them gravel sized (greater than 2 mm);

“**dilution**” means waste or low-grade rock which is unavoidably removed along with the ore in the mining process;

“**EIA**” means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes both a scoping exercise and an environmental impact report, including for purposes of South Africa those matters identified in Parts 2 and 3 of the Environmental Impact Assessment Regulations, 2010 published in GNR 543 GG 33306 of June 18, 2010 in terms of sections 24(5), 24M and 44 of the *National Environmental Management Act, No. 107 of 1998* (South Africa);

**“Feasibility Study”** means a comprehensive study of a range of options on the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open-pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions of mining, processing, metallurgical, economic, marketing, legal, environmental, social and governmental considerations and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be classified as a Mineral Reserve;

**“Flatreef”** means the flat to gently-dipping portion of the UMT-TCU deposit that occurs at relatively shallow depths of approximately 700 to 1,100 metres below surface;

**“flotation”** means separation of minerals based on the capture of mineral particles having hydrophobic surfaces by bubbles introduced to a mineral slurry. Reagents, called collectors, are added to the slurry to render the surface of selected minerals hydrophobic. Air bubbles are introduced to which the hydrophobic minerals attach. The selected minerals are levitated to the top of the flotation machine by their attachment to the bubbles and into a froth product, called the “flotation concentrate.” If this froth carries more than one mineral as a designated main constituent, it is called a “bulk float”. If it is selective to one constituent of the ore, where more than one constituent will be floated, it is called a “differential” float;

**“footwall”** means the rock on the underside of a vein, fault, or ore deposit;

**“grade shells”** means a three-dimensional isograd that represents a specific grade value in three dimensions;

**“hanging wall”** means the rock on the upper or top side of a vein, fault, or ore deposit;

**“harzburgites”** means a variety of peridotite consisting mostly of two minerals, olivine and low-calcium (Ca) pyroxene (enstatite);

**“hypogene”** means formed from processes within the earth; more generally, “primary” as opposed to “secondary” (supergene, formed at the earth’s surface). Hypogene mineralization or ores are commonly comprised of sulphide;

**“Indicated Mineral Resource”** means 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 testing 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”** means that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assured, 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;

**“Katanga Supergroup”** means a sequence of sedimentary rocks of late Precambrian age within which occur the ore deposits of the Central African Copperbelt;

**“mafic”** means igneous rock composed mostly of one or more ferromagnesian, dark coloured minerals such as amphibole, pyroxene and olivine;

**“Measured Mineral Resource”** means 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;

**“Merensky Reef”** means a mineralized PGE zone within the eastern and western limbs of the Bushveld Complex, and together with UG2, the location of most PGE mining in the Bushveld Complex conducted to date;

**“mill”** means any ore mill, concentration, crushing, grinding, or screening plant used at, and in connection with, an excavation or mine;

**“Mineral Reserve”** means the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Pre-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. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined;

**“Mineral Resource”** means a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material, including base and precious metals, coal, and industrial minerals in or on the earth’s crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge;

**“norite”** means a coarse grained plutonic rock containing basic plagioclase (labradorite);

**“open-pit”** means a mine that is entirely on the surface;

**“ounce”** means a troy ounce, a system of measurement for precious metals, used in imperial statistics, and which is equal to 31.1035 grams;

**“plant”** means a sub-section of or complete complex in which a metallurgical or chemical process or function is carried out; at a mine reference to a plant will typically include warehouses, hoisting equipment, compressors, repair shops, offices and mill or concentrator;

**“Platreef”** means that pyroxenitic unit with nickel-copper-PGE mineralization that forms the base of the layered igneous succession in the northern limb of the Bushveld Complex;

**“Pre-Feasibility Study”** means a comprehensive study of the viability of a mineral project that has advanced to a stage where the mining method, in the case of underground mining, or the pit configuration, in the case of an open-pit, has been established and an effective method of mineral processing has been determined, and includes a financial analysis based on reasonable assumptions of technical, engineering, legal, operating, economic, social, and environmental factors and the evaluation of other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be classified as a Mineral Reserve;

**“Probable Mineral Reserve”** is the economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource demonstrated by at least a Pre-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**” means the later of the two divisions of Precambrian time from approximately 2,500 Ma to 540 Ma;

“**Proven Mineral Reserve**” means the economically mineable part of a Measured Mineral Resource demonstrated by at least a Pre-Feasibility Study, which study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified;

“**pyroxene**” means a group of important rock-forming inosilicate minerals found in many igneous and metamorphic rocks. They share a common structure consisting of single chains of silica tetrahedra and they crystallize in the monoclinic and orthorhombic systems. Pyroxenes have the general formula  $XY(\text{Si,aluminium})_2\text{O}_6$  (where X represents calcium, sodium, iron+2 and magnesium and more rarely zinc, manganese and lithium and Y represents ions of smaller size, such as chromium, aluminium, iron+3, magnesium, manganese, scandium, titanium, vanadium and even iron+2);

“**pyroxenite**” means an ultramafic igneous rock consisting essentially of minerals of the pyroxene group, such as augite and diopside, hypersthene, bronzite or enstatite. They are classified into clinopyroxenites, orthopyroxenites, and the websterites which contain both pyroxenes;

“**remediation**” means the environmental restoration of a site after mining or exploration activity is completed;

“**refining**” means a process in which impure metal is processed to reduce the impurities. Two common processes are fire (pyrometallurgical) refining and electro-refining. In fire refining metal is collected in a molten layer and the impurities are driven off as gasses or collect in a slag layer. In electro-refining (or electrowinning) an impure anode is taken into solution and, simultaneously, refined metal is plated out of the solution as a cathode. Impurities either remain with the spent anode or fall to the bottom of the tank for later collection as a sludge. Refining results in the production of a marketable material;

“**Resource Estimates**” mean any one or more of a Measured Mineral Resource, Indicated Mineral Resource or Inferred Mineral Resource;

“**specific gravity**” means the weight of a substance compared with the weight of an equal volume of pure water at 4°C;

“**stratiform**” means forming a layer or arranged in layers; occurring as or arranged in strata;

“**stratigraphic**” means of or pertaining to the arrangement of strata; stratigraphy, the study of rock layers (strata) and the layering process (stratification); the layering of deposits, with newer strata overlying older ones, forming a chronology of the site; a stratigraphic cycle in a magmatic deposit is the cycle of the different layers;

“**strike length**” means the horizontal distance along the long axis of a structural surface, rock unit, mineral deposit or geochemical anomaly;

“**supergene**” means mineral enrichment produced by the chemical remobilization of metals in an oxidized or transitional environment;

“**tailings**” mean material rejected from a concentrator after the recoverable valuable minerals have been extracted;

“**Transvaal Supergroup**” means a circa 15 km thick package of quartzites, conglomerates, dolomites, limestones, cherts, shales, and banded iron-formation that were deposited on the Kaapvaal craton and range in age from approximately 2714 Ma to 2100 Ma;

“**UG2**” means a mineralized PGE zone within the eastern and western limbs of the Bushveld Complex, and together with Merensky Reef, the location of most PGE mining in the Bushveld Complex conducted to date;

“**UMT deposit**” means the underground deposit of the Platreef Project located almost entirely on Turfspruit, with the remaining portions located on Macalacaskop; and

“**UMT-TCU deposit**” means that portion of the underground selectively mineable UMT deposit that occurs within or in close proximity to the grade shells used to model Mineral Resources of the Turfspruit Cyclic Unit.

## ABBREVIATIONS

“**2PE+Au**” means the sum of platinum, palladium and gold;

“**3PE+Au**” means the sum of platinum, palladium, rhodium and gold;

“**Au**” means gold;

“**CIM**” means Canadian Institute of Mining, Metallurgy and Petroleum;

“**CRMs**” mean certified reference materials;

“**Cu**” means copper;

“**g/t**” means grams per tonne;

“**km**” means kilometres;

“**kt**” means kilotonne;

“**Ktpa**” means kilotonne per annum;

“**lb**” means pound;

“**m**” means metre;

“**Ma**” means million years ago;

“**mL**” means metre level;

“**mm**” means millimetres;

“**M**” means million;

“**Moz**” means million oz;

“**Mt**” means million tonnes;

“**Mtpa**” means million tonnes per annum;

“**Ni**” means nickel;

“**oz**” means a troy ounce;

“**Pd**” means palladium;

“**PGE**” means platinum group elements, including platinum, palladium and rhodium;

“**ppb**” means parts per billion;

“**Pt**” means platinum;

“**RC**” means reverse circulation;

“**SxEw**” means solvent extraction and electrowinning;

“**tpa**” means tonnes per annum;

“**µm**” means micrometre (micron);

“**XRF**” means X-ray fluorescence; and

“**Zn**” means zinc.

**SCHEDULE “B”  
IVANHOE MINES LTD.  
AUDIT COMMITTEE  
CHARTER**

**I Purpose**

The primary objective of the Audit Committee (the “Committee”) of Ivanhoe Mines Ltd. (the “Company”) is to act as a liaison between the Board and the Company’s independent auditors (the “Auditors”) and to assist the Board in fulfilling its oversight responsibilities with respect to (a) the financial statements and other financial information provided by the Company to its shareholders, the public and others, (b) the Company’s compliance with legal and regulatory requirements, (c) the qualification, independence and performance of the Auditors and (d) the Company’s risk management and internal financial and accounting controls, and management information systems.

Although the Committee has the powers and responsibilities set forth in this Charter, the role of the Committee is oversight. The members of the Committee are not full-time employees of the Company and may or may not be accountants or auditors by profession or experts in the fields of accounting or auditing and, in any event, do not serve in such capacity. Consequently, it is not the duty of the Committee to conduct audits or to determine that the Company’s financial statements and disclosures are complete and accurate and are in accordance with generally accepted accounting principles and applicable rules and regulations. These are the responsibilities of management and the Auditors.

The responsibilities of a member of the Committee are in addition to such member’s duties as a member of the Board.

**II. Organization**

The Committee shall consist of three or more directors and shall satisfy the laws governing the Company and the independence, financial literacy, expertise and experience requirements under applicable securities law, stock exchange and any other regulatory requirements applicable to the Company.

The members of the Committee and the Chair of the Committee shall be appointed by the Board on the recommendation of the Nominating & Corporate Governance Committee. A majority of the members of the Committee shall constitute a quorum. A majority of the members of the Committee shall be empowered to act on behalf of the Committee. Matters decided by the Committee shall be decided by majority votes. The chair of the Committee shall have an ordinary vote.

Any member of the Committee may be removed or replaced at any time by the Board and shall cease to be a member of the Committee as soon as such member ceases to be a director.

The Committee may form and delegate authority to subcommittees when appropriate.

**III. Meetings**

The Committee shall meet as frequently as circumstances require, but not less frequently than four times per year. The Committee shall meet at least quarterly with management, the Company’s Chief Financial Officer and the Auditors in separate in-camera sessions to discuss any matters that the Committee or each of the Chief Financial Officer or Auditors believe should be discussed privately.

The Chair of the Committee shall be an independent chair who is not Chair of the Board. In the absence

of the appointed Chair of the Committee at any meeting, the members shall elect a chair from those in attendance at the meeting. The Chair, in consultation with the other members of the Committee, shall set the frequency of each meeting and the agenda of items to be addressed at each upcoming meeting.

The Committee will appoint a recording secretary who will keep minutes of all meetings. The recording secretary may be the Company's Corporate Secretary or another person who does not need to be a member of the Committee. The recording secretary for the Committee can be changed by simple notice from the Chair.

The Chair shall ensure that the agenda for each upcoming meeting of the Committee is circulated to each member of the Committee as well as the other directors in advance of the meeting.

The Committee may invite, from time to time, such persons as it may see fit to attend its meetings and to take part in discussion and consideration of the affairs of the Committee. The Company's accounting and financial officer(s) and the Auditors shall attend any meeting when requested to do so by the Chair of the Committee.

#### **IV. Authority and Responsibilities**

The Board, after consideration of the recommendation of the Committee, shall nominate the Auditors for appointment by the shareholders of the Company in accordance with applicable law. The Auditors report directly to the Audit Committee. The Auditors are ultimately accountable to the Committee and the Board as representatives of the shareholders.

The Committee shall have the following responsibilities:

##### **(a) Auditors**

1. Recommend to the Board the independent auditors to be nominated for appointment as Auditors of the Company at the Company's annual meeting and the remuneration to be paid to the Auditors for services performed during the preceding year; approve all auditing services to be provided by the Auditors; be responsible for the oversight of the work of the Auditors, including the resolution of disagreements between management and the Auditors regarding financial reporting; and recommend to the Board and the shareholders the termination of the appointment of the Auditors, if and when advisable.
2. When there is to be a change of the Auditor, review all issues related to the change, including any notices required under applicable securities law, stock exchange or other regulatory requirements, and the planned steps for an orderly transition.
3. Review the Auditor's audit plan and discuss the Auditor's scope, staffing, materiality, and general audit approach.
4. Review on an annual basis the performance of the Auditors, including the lead audit partner.
5. Take reasonable steps to confirm the independence of the Auditors, which include:
  - a. Ensuring receipt from the Auditors of a formal written statement in accordance with applicable regulatory requirements delineating all relationships between the Auditors and the Company;

- b. Considering and discussing with the Auditors any disclosed relationships or services, including non-audit services, that may impact the objectivity and independence of the Auditors;
  - c. Approving in advance any non-audit related services provided by the Auditor to the Company, and the fees for such services, with a view to ensure independence of the Auditor, and in accordance with applicable regulatory standards, including applicable stock exchange requirements with respect to approval of non-audit related services performed by the Auditors; and
  - d. As necessary, taking or recommending that the Board take appropriate action to oversee the independence of the Auditors.
- 6. Review and approve any disclosures required to be included in periodic reports under applicable securities law, stock exchange and other regulatory requirements with respect to non-audit services.
  - 7. Confirm with the Auditors and receive written confirmation at least once per year (i) indicating that the Auditors are a member in good standing with the Canadian Public Accountability Board (CPAB) and comparable bodies in the United States, South Africa and elsewhere to the extent required and disclosing any sanctions or restrictions imposed by the CPAB and such other comparable bodies; and (ii) responding to any other reasonable request of the Audit Committee for confirmation as to their qualifications to act as the Company's Auditors.
  - 8. Consider the tenure of the lead audit partner on the engagement in light of applicable securities law, stock exchange or applicable regulatory requirements.
  - 9. Review all reports required to be submitted by the Auditors to the Committee under applicable securities laws, stock exchange or other regulatory requirements.
  - 10. Receive all recommendations and explanations which the Auditors place before the Committee.

**(b) Financial Statements and Financial Information**

- 11. Review and discuss with management and the Auditors, the Company's annual audited financial statements, including disclosures made in management's discussion and analysis, prior to filing or distribution of such statements and recommend to the Board, if appropriate, that the Company's audited financial statements be included in the Company's annual reports distributed and filed under applicable laws and regulatory requirements.
- 12. Review and discuss with management and the Auditors, the Company's interim financial statements, including management's discussion and analysis, and the Auditor's review of interim financial statements, prior to filing or distribution of such statements.
- 13. Review any earnings press releases of the Company before the Company publicly discloses this information.
- 14. Be satisfied that adequate procedures are in place for the review of the Company's disclosure of financial information and extracted or derived from the Company's financial statements and periodically assess the adequacy of these procedures.

15. Discuss with the Auditor the matters required to be discussed by applicable auditing standards requirements relating to the conduct of the audit including:
  - a. the adoption of, or changes to, the Company's significant auditing and accounting principles and practices;
  - b. the management letter provided by the Auditor and the Company's response to that letter; and
  - c. any difficulties encountered in the course of the audit work, including any restrictions on the scope of activities or access to requested information, or personnel and any significant disagreements with management.
16. Discuss with management and the Auditors major issues regarding accounting principles used in the preparation of the Company's financial statements, including any significant changes in the Company's selection or application of accounting principles. Review and discuss analyses prepared by management and/or the Auditors setting forth significant financial reporting issues and judgments made in connection with the preparation of the financial statements, including analyses of the effects of alternative approaches under international financial reporting standards.
17. Prepare any report under applicable securities law, stock exchange or other regulatory requirements, including any reports required to be included in statutory filings, including in the Company's annual proxy statement.

**(c) Ongoing Reviews and Discussions with Management and Others**

18. Obtain and review an annual report from management relating to the accounting principles used in the preparation of the Company's financial statements, including those policies for which management is required to exercise discretion or judgments regarding the implementation thereof.
19. Periodically review separately with each of management and the Auditors; (a) any significant disagreement between management and the Auditors in connection with the preparation of the financial statements, (b) any difficulties encountered during the course of the audit, including any restrictions on the scope of work or access to required information and (c) management's response to each.
20. Periodically discuss with the Auditors, without management being present, (a) their judgments about the quality and appropriateness of the Company's accounting principles and financial disclosure practices as applied in its financial reporting and (b) the completeness and accuracy of the Company's financial statements.
21. Consider and approve, if appropriate, significant changes to the Company's accounting principles and financial disclosure practices as suggested by the Auditors or management and the resulting financial statement impact. Review with the Auditors and/or management the extent to which any changes or improvements in accounting or financial practices, as approved by the Committee, have been implemented.
22. Review and discuss with management, the Auditors and the Company's independent counsel, as appropriate, any legal, regulatory or compliance matters that could have a significant impact on the Company's financial statements, including applicable changes in accounting standards or

rules, or compliance with applicable laws and regulations, inquiries received from regulators or government agencies and any pending material litigation.

23. Enquire of the Company's Chief Financial Officer and the Auditors on any matters which should be brought to the attention of the Committee concerning accounting, financial and operating practices and controls and accounting practices of the Company.
24. Review the principal control risks to the business of the Company, its subsidiaries and joint ventures; and verify that effective control systems are in place to manage and mitigate these risks.
25. Review and discuss with management any earnings press releases, including the use of "pro forma" or "adjusted" non-IFRS information, as well as any financial information and earnings guidance provided to analysts and rating agencies. Such discussions may be done generally (i.e. discussion of the types of information to be disclosed and the types of presentations made).
26. Review and discuss with management any material off-balance sheet transactions, arrangements, obligations (including contingent obligations) and other relationships of the Company with unconsolidated entities or other persons, that may have a material current or future effect on financial condition, changes in financial condition, results of operations, liquidity, capital resources, capital reserves or significant components of revenues or expenses. Obtain explanations from management of all significant variances between comparative reporting periods.
27. Review and discuss with management the Company's major risk exposures and the steps management has taken to monitor, control and manage such exposures, including the Company's risk assessment and risk management guidelines and policies.

**(d) Risk Management and Internal Controls**

28. Review, based upon the recommendation of the Auditors and management, the scope and plan of the work to be done by the Company's financial and accounting group and the responsibilities, budget and staffing needs of such group.
29. Engage Internal Auditors annually to review an report to the committee to ensure that management has designed and implemented effective systems of risk management and internal controls and, at least annually, review and assess the effectiveness of such systems.
30. Approve and recommend to the Board for adoption, policies and procedures on risk oversight and management to establish an effective system for identifying, assessing, monitoring and managing risk.
31. In consultation with the Auditors and management, review the adequacy of the Company's internal control structure and procedures designed to insure compliance with laws and regulations, and discuss the responsibilities, budget and staffing needs of the Company's financial and accounting group.
32. Establish procedures for (a) the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters and (b) the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters.



33. Review the internal control reports prepared by management, including management's assessment of the effectiveness of the Company's internal control structure and procedures for financial reporting and (ii) the Auditors' attestation, and report, on the assessment made by management.
34. Review the appointment of the chief financial officer and any key financial executives involved in the financial reporting process and recommend to the Board any changes in such appointment.

**(e) Other Responsibilities**

35. Confirm a meeting calendar for the Audit Committee each year.
36. Review, quarterly, approve and report to the Board for ratification, all related-party transactions.
37. Review and approve (a) any change or waiver in the Company's Code of Business Conduct and Ethics applicable to senior financial officers and (b) any disclosures made under applicable securities law, stock exchange or other regulatory requirements regarding such change or waiver.
38. Establish, review and approve policies for the hiring of employees or former employees of the Company's Auditors.
39. Review and reassess the duties and responsibilities set out in this Charter annually and recommend to the Nominating and Corporate Governance Committee and to the Board any changes deemed appropriate by the Committee.
40. Review its own performance annually, seeking input from management and the Board.
41. Perform any other activities consistent with this Charter, the Company's articles and by-laws and governing law, as the Committee or the Board deems necessary or appropriate.

**V. Reporting**

The Committee shall report regularly to the Board and shall submit the minutes of all meetings of the Audit Committee to the Board (which minutes shall ordinarily be included in the papers for the next full board meeting after the relevant meeting of the Committee). The Committee shall also report to the Board on the proceedings and deliberations of the Committee at such times and in such manner as the Board may require. The Committee shall review with the full Board any issues that have arisen with respect to quality or integrity of the Company's financial statements, the Company's compliance with legal or regulatory requirements, the performance or independence of the Auditors or the performance of the Company's financial and accounting group.

**VI. Resources and Access to Information**

The Committee has the authority to retain independent legal, accounting and other consultants to advise the Committee as it deems necessary.

The Committee has the authority to conduct any investigation appropriate to fulfilling its responsibilities. The Committee has direct access to anyone in the organization and may request any officer or employee of the Company or the Company's outside counsel or the Auditors or the Internal Auditors to attend a meeting of the Committee or to meet with any members of, or consultants to, the Committee with or without the presence of management. In the performance of any of its duties and responsibilities, the Committee shall have access to any and all books and records of the Company necessary for the

execution of the Committee's obligations.

The Committee shall consider the extent of funding necessary for payment of compensation to the Auditors for the purpose of rendering or issuing the annual audit report and recommend such compensation to the Board for approval. The Audit Committee shall determine the funding necessary for payment of compensation to any independent legal, accounting and other consultants retained to advise the Committee.