IVANHOE MINES
NEW HORIZONS

Annual Information Form

For the year ended December 31, 2017

March 29, 2018

TABLE OF CONTENTS

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 any of its mineral projects, or industry results, to be materially different from any future results, expectations, performance or achievements expressed or implied by such forward-looking statements or forward-looking 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 forward-looking information include, but are not limited to: (i) the implementation of a resettlement plan to identify the tradition owners within the Kamoa-Kakula Project; (ii) the estimated net present value, internal rate of return and expected steady-state production of the Kamoa-Kakula Project disclosed herein and reported in the Kamoa-Kakula Technical Report; (iii) the potential for the use of controlled convergence room-and-pillar mining at the Kamoa-Kakula Project; (iv) development of the first phase of an underground mine and the concentrator processing facility at the Platreef Project; (v) plans to develop the Platreef Mine in three phases: an initial annual rate of four Mtpa, followed by a doubling of production to eight Mtpa, and then a third expansion phase to a steady-state 12 Mtpa; (vi) estimates of the pre-production capital costs of the Platreef Project of approximately $1.5 billion; (vii) the estimated net present value, internal rate of return and expected steady-state production of the Platreef Project reported in the Platreef FS; (viii) estimates of cash cost (including life-of-mine average cash costs of $326 per ounce of 3PE+Au after credits) for the Platreef Project; (ix) the completion of the sinking of Shaft 1 at the Platreef Project; (x) the potential for the re-establishment of underground mining operations at the Kipushi Project; (xi) the estimated net present value, internal rate of return and expected steady-state production of the Kipushi Project reported in the Kipushi PFS; (xii) the availability and development of water and electricity projects for the Platreef Project (including the De Hoop Dam); (xiii) the obtaining of project finance for the Kamoa-Kakula Project by the Company's joint venture partner; (xiv) the commencement of development and/or mining operations at any Project; (xv) metallurgical testwork, concentrator design, proposed mining plans and methods, mine production rates, mine life, metal recoveries and future estimated cash flow at the Kamoa-Kakula, Platreef and Kipushi Projects; (xvi) future commodity prices, including commodity price assumptions underlying the Kakula PEA, the Kamoa PFS, the Platreef FS and the Kipushi PFS; (xvii) the planned amount and timing, as well as the degree of success of, any future exploration program including drilling programs, including the potential addition of Mineral Resources and the potential to upgrade exploration targets to Mineral Resources as a result of such exploration and drilling programs; (xviii) the prospective receipt of permits, licences or approvals at any Project, including those necessary to commence development or mining operations; and (xix) expected activities or results of exploration, development or mining operations at any Project. In addition, all of the results of the Kakula PEA, Platreef FS, Kamoa PFS and Kipushi PFS are forward-looking statements or forward-looking information.

With respect to forward-looking statements or forward-looking 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 and Mineral Reserves; (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 or

its joint venture partners, as required, will be able to obtain additional financing on satisfactory terms, including financing necessary to advance the development of any Project; (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 joint venture partners at the Kamoa-Kakula Project, the Platreef Project and the Kipushi Project comply with, and fulfill, all terms and conditions of joint venture agreements entered into with the Company that are required to be fulfilled by such joint venture partners; (ix) that the Company will be able to successfully negotiate land access with holders of surface rights at the Platreef Project; (x) that the Company will be able to obtain, maintain, renew or extend required permits; and (xi) that war, civil strife, terrorism 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.

In making the forward-looking statements and forward-looking information, the Company has made such statements based on assumptions and analyses on certain factors which are inherently uncertain. Uncertainties include among others: (i) the adequacy of infrastructure and rehabilitation or upgrade of existing infrastructure; (ii) geological characteristics; (iii) metallurgical characteristics of the mineralization; (iv) the ability to develop adequate processing capacity; (v) the price of copper, nickel, zinc, PGE, gold or other minerals; (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 laws or regulations; (xii) the availability and productivity of skilled labour; (xiii) the regulation of the mining industry by various governmental agencies; and (xiv) political factors and political stability, including the occurrence of local, state, provincial or national elections, including that elected officials continue to look favorably on foreign mining investment.

This AIF also contains references to estimates of Mineral Resources and Mineral Reserves. 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. Mineral Reserves that have demonstrated economic viability may cease to be economically viable as a result of many factors, including those set forth in the AIF. The accuracy of any such estimates of Mineral Resources and Mineral Reserves 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, among other things: (i) fluctuations in copper, nickel, PGE, gold, zinc or other mineral prices; (ii) results of drilling; (iii) results of 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. Mineral Reserves may have to be re-estimated based on, among other things: (i) fluctuations in copper, nickel, zinc, PGE, gold, or other mineral prices; (ii) results of actual mining operations; (iii) changes to mine plans subsequent to the date of any estimates; or (iv) the possible failure to receive required permits, approvals and licences, or the failure to have such required permits, approvals, or licences honored or extended.

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

above and below and under "*Risk Factors*", as well as unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities, including potentially arbitrary action; the failure of parties to contracts with the Company to perform as agreed, including its joint venture partners; social or labour unrest; changes in commodity prices; unexpected changes in the cost of mining consumables; and the failure of exploration programs or current or future economic 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 "*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 "$", "US$", "USD" 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 and based upon the following current technical reports, and is qualified by reference to such technical reports:

- technical report dated March 23, 2018 titled "*Kamoa-Kakula 2018 Resource Update"* prepared by OreWin Pty Ltd, Amec, SRK Consulting (South Africa) (Pty) Ltd. and Stantec Consulting International LLC covering the Company's Kamoa-Kakula Project (the "**Kamoa-Kakula Technical Report**");

- technical report dated September 4, 2017 titled "*Platreef 2017 Feasibility Study"* prepared by OreWin Pty Ltd, Amec, SRK Consulting Inc., Stantec Consulting International LLC, DRA Projects (Pty) Ltd. and Golder Associates Africa (Pty) Ltd covering the Company's Platreef Project (the "**Platreef Technical Report**"); and

- technical report dated January 25, 2018 titled "*Kipushi 2017 Prefeasibility Study*" prepared by OreWin Pty Ltd, MSA Group (Pty) Ltd, SRK Consulting (South Africa) (Pty) Ltd and MDM (Technical) Africa Pty Ltd covering the Company's Kipushi Project (the "**Kipushi Technical Report**");

the Kamoa-Kakula 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. 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. On October 26, 2016, the Class A shares also began trading on the OTCQX under the symbol "IVPAF".

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;

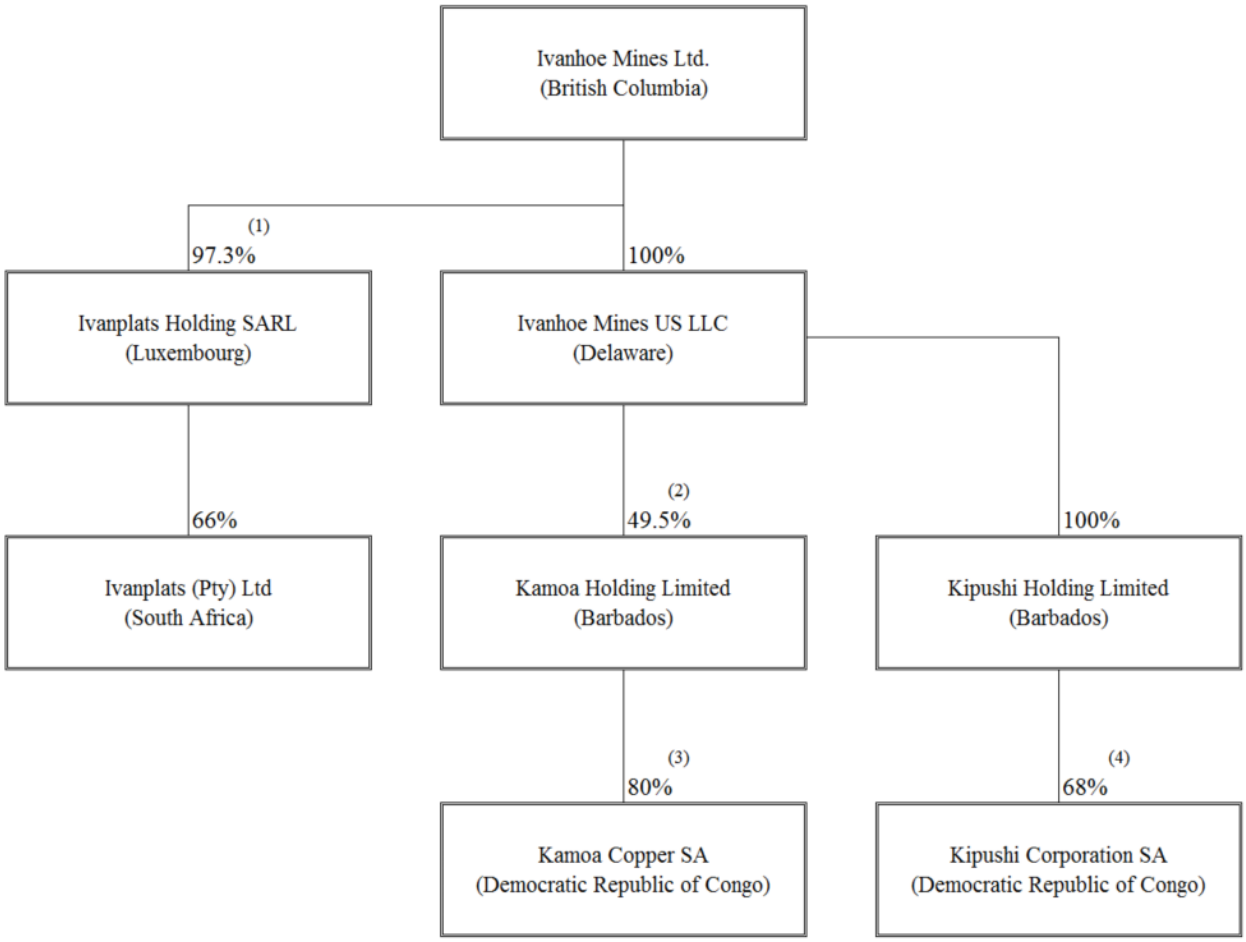
(c) on September 11, 2012, the Company completed: (i) a reclassification of each outstanding Original Common Share as a Class B Share; and (ii) the creation of a new class of common shares, being the Class A Shares; and

(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 last of the Lock-up Shareholders had all their Class A Shares released from the lock-up on January 23, 2016. 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 and joint ventures. The following sets forth the name and jurisdiction of incorporation of the Company and its material subsidiaries and joint ventures, as at March 29, 2018.



Notes:

(1) Itochu, together with ITC Platinum, holds an effective 10% equity interest in Ivanplats (Pty) Ltd, directly and indirectly, through an interest in Ivanplats Holding Sarl. See "*Material Contracts - Itochu Investment*".

(2) 49.5% of the remaining 50.5% in Kamoa Holding Limited is held by Gold Mountains (H.K.) International Mining Company Limited, a subsidiary of Zijin Mining and 1% is held by Crystal River. See "*Material Contracts – Kamoa Holding Shareholder and Governance Agreement*".

(3) The remaining 20% in Kamoa Copper SA is held by the DRC state, 5% of which is in accordance with the DRC Mining Code. See "*Description of the Business - Kamoa-Kakula Project*", "*Material Contracts – Kamoa Holding Shareholder and Governance Agreement*" and "*Material Contracts – Kamoa Holding Share Transfer Agreement"*

(4) The remaining 32% in Kipushi Corporation SA is held by Gécamines.

GENERAL DEVELOPMENT OF THE BUSINESS

Overview

Ivanhoe is a mineral exploration and development company, whose principal properties are located in Southern 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 on the northern limb of the Bushveld Complex. The Company currently has three key assets:

- *The Kamoa-Kakula Project*, a large, high-grade copper deposit discovered by the Company beyond the previously known western limit of the Central African Copperbelt, in Lualaba 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 Haut-Katanga Province, DRC.

The Company also holds interests in prospective mineral properties in the DRC including a land package of approximately 1,300km^2 in Lualaba and Haut-Katanga provinces, around the perimeter of the historical limits of the Central African Copperbelt.

Three Year History

2015

In January 2015, Ivanhoe completed an independent Pre-feasibility Study of the Platreef Project ("**Platreef PFS**"). The Platreef PFS reported an after-tax net present value, at an 8% discount rate, of $972 million and an IRR of 13%.The first phase of development, four Mtpa concentrator case, is expected to reach life-of-mine average production of 433,000 3PE+Au ounces per year.

In April 2015, Ivanhoe completed a private placement with Zijin Mining for 76,817,020 Class A Shares at a price of C$1.36 per share resulting in approximately C$105 million in gross proceeds to the Company.

In December 2015, Zijin Mining, through subsidiary company Gold Mountains (H.K.) International Mining Company Limited, completed its acquisition of a 49.5% interest in Kamoa Holding, the then Ivanhoe subsidiary that presently holds the Company's 80% interest in the Kamoa-Kakula Project, for an aggregate total of US$412 million, payable in a series of payments. Concurrently, Ivanhoe also sold 1% of its share interest in Kamoa Holding to Crystal River for US$8.32 million which Crystal River will repay through a non-interest-bearing, 10-year promissory note. The transaction was originally executed and announced in May, 2015. See "*Material Contracts – Kamoa Holding Shareholder and Governance Agreement*."

2016

In January 2016, the Company completed a new Mineral Resource estimate on the Kipushi Project, which was subsequently confirmed and updated by MSA Group (Pty.) Ltd., of Johannesburg, South Africa. The new Mineral Resource estimate for the Big Zinc Zone reported 10.2 million tonnes at grades of 34.89% zinc, 0.65% copper, 19 grams per tonne (g/t) silver and 51 g/t germanium, at a 7% zinc cut-off, containing an estimated 7.8 billion pounds of zinc. Additional inferred zinc rich resources totalled

1.9 million tonnes at grades of 28.24% zinc, 1.18% copper, 10 g/t silver and 53 g/t germanium containing an estimated 1.2 billion pounds of zinc.

In February 2016, Ivanhoe completed an independent Pre-feasibility Study of the Kamoa Project ("**Kamoa PFS**"). The Kamoa PFS reported an after-tax net present value, at an 8% discount rate, of $986 million and an IRR of 17%. The first phase of development, three Mtpa concentrator case, is expected to reach life-of-mine average production of 100,000 tonnes of copper per year.

In May 2016, Ivanhoe completed an independent Preliminary Economic Assessment of the Kipushi Project ("**Kipushi PEA**"). The Kipushi PEA reported an after-tax net present value, at an 8% discount rate, of $533 million and an IRR of 31%. The development plan envisages a 10 year mine life and reaches life-of-mine average production of 281,000 tonnes of zinc per year.

In May 2016, the Company announced a substantial increase in Indicated and Inferred Mineral Resources at the Platreef Project. The Platreef Indicated Mineral Resources for all mineralized zones are 346 million tonnes at a grade of 3.77 grams per tonne (g/t) 3PE+gold (1.68 g/t platinum, 1.70 g/t palladium, 0.11 g/t rhodium, 0.28 g/t gold), 0.32% nickel and 0.16% copper at a 2.0 g/t 3PE+gold cut-off. Inferred Mineral Resources for all mineralized zones are 506 million tonnes at a grade of 3.24 g/t 3PE+gold (1.42 g/t platinum, 1.46 g/t palladium, 0.10 g/t rhodium, 0.26 g/t gold), 0.31% nickel and 0.16% copper at a 2.0 g/t 3PE+gold cut-off.

In October 2016, the Company announced a maiden Indicated and Inferred Mineral Resources estimate at Kakula. Kakula is the second major discovery on the Kamoa mining licence. The Kakula Indicated Mineral Resources are 192 million tonnes at a grade of 3.45% copper at a 1% copper cut-off. Inferred Mineral Resources are 101 million tonnes at a grade of 2.74% copper at a 1% copper cut-off. Given the significance of the new Kakula Discovery, the Kamoa Project was renamed the Kamoa-Kakula Project.

In November 2016, Kamoa Holding Limited, a subsidiary of the Company, transferred 300 Class A shares in the capital of Kamoa Copper SA, representing 15% of Kamoa Copper SA's share capital, to the DRC government, in consideration for a nominal cash payment and other guarantees from the DRC government. See "*Material Contracts – Kamoa Holding Share Transfer Agreement*".

In December 2016, Ivanhoe completed an independent Preliminary Economic Assessment of two development scenarios for the Kakula Deposit and the adjacent Kamoa Deposit. The initial option for a single four Mtpa mine at Kakula reported an after-tax net present value, at an 8% discount rate, of $3.7 billion and an IRR of 38%. The first phase of development, a four Mtpa concentrator case, would be expected to reach life-of-mine average production of 216,000 tonnes of copper per year. The second option considered two mines – one at the Kakula Deposit and one at the Kamoa Deposit, producing a total of eight Mtpa - reported an after-tax net present value, at an 8% discount rate, of $4.7 billion and an IRR of 35%.

2017

In May 2017, the Company announced an increased Indicated and Inferred Mineral Resources estimate at Kakula. The Kakula Indicated Mineral Resources are estimated at 349 million tonnes at a grade of 3.23% copper at a 1% copper cut-off. Inferred Mineral Resources are estimated at 59 million tonnes at a grade of 2.26% copper at a 1% copper cut-off. The new estimate increased the combined Kamoa-Kakula Indicated Mineral Resources to 1.1 billion tonnes at a grade of 2.85% copper and Inferred Mineral Resources to 244 million tonnes at a grade of 2.12% copper, both at a 1% copper cut-off.

In July 2017, Ivanhoe completed an independent definitive Feasibility Study of the Platreef Project ("**Platreef FS**"). The Platreef FS reported an after-tax net present value, at an 8% discount rate, of $916

million and an IRR of 14%.The first phase of development, four Mtpa concentrator case, is expected to reach life-of-mine average production of 476,000 3PE+Au ounces per year.

In November 2017, Ivanhoe completed an updated independent Preliminary Economic Assessment of several development scenarios for the Kakula Deposit and the adjacent Kamoa Deposit ("**Kakula 2017 PEA**"). The initial option is for a six Mtpa mine and concentrator at Kakula, reporting an after-tax net present value, at an 8% discount rate, of $4.2 billion and an IRR of 36%. Under the six Mtpa scenario, Kakula would be expected to reach average production of 284,000 tonnes of copper per year for the first ten years of operations. The Kakula 2017 PEA also considered a two-stage, modular development of an initial six Mtpa mine at Kakula, followed by a six Mtpa mine at Kamoa, for a combined production rate of 12 Mtpa, producing 370,000 tonnes of copper per year for the first ten years of operations. This expanded scenario delivers an after-tax net present value, at an 8% discount rate, of $7.2 billion and an IRR of 33%, over a 44-year life-of-mine. In conjunction with the Kakula 2017 PEA, Ivanhoe completed an updated Pre-feasibility Study of the Kamoa Project ("**Kamoa 2017 PFS**"), at an expanded mining rate of six Mtpa. The Kamoa 2017 PFS reported an after-tax net present value, at an 8% discount rate, of $2.1 billion and an IRR of 24%.

In December 2017, Ivanhoe completed an independent Pre-feasibility Study of the Kipushi Project ("**Kipushi PFS**"). The Kipushi PFS reported an after-tax net present value, at an 8% discount rate, of $683 million and an IRR of 35%. The development plan envisages an 11 year mine life and reaches life of mine average production of 225,000 tonnes of zinc 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 Southern Africa. The Company has focused on exploration and development of three principal projects within the Central African Copperbelt and the northern limb of the Bushveld Complex.

The Company currently has three key assets: (i) the Kamoa-Kakula Project; (ii) the Platreef Project, and (iii) the Kipushi Project. In addition, the Company holds interests in prospective mineral properties in the DRC, including a land package of approximately 1,300km^2 in the Central African Copperbelt. Advancing the Kamoa-Kakula, Kipushi and Platreef Projects from discovery to production are key near-term objectives, which, in the case of the Platreef Project, includes shaft sinking and lateral underground development to establish access to the ore body. At the Kamoa-Kakula Project, box cut and underground decline development is ongoing to provide access to the Kakula Deposit, having completed a box cut and underground decline to the Kamoa Deposit in 2017. At the Kipushi Project, existing underground infrastructure is being refurbished to facilitate a return to production. Exploration and development will continue to play key roles in the Company's business strategy.

The Company presently has no mining projects in production and does not produce or sell any mineral products. Future planned mining operations are described with respect to each of the Company's three projects elsewhere in this AIF under the description of each project.

Employees

As of the date of this AIF, the Company (including through its subsidiaries) had approximately 745 employees. Approximately 55% 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.

Specialized Skills and Knowledge

Numerous types of specialized skill and knowledge is required in the exploration for minerals, and in the subsequent development, construction and operation of a mine. These include specialized geological, engineering, and related technical skills. The Company has the necessary skilled employees and consultants in order to carry on its business as conducted, and where not available internally, the

Company is able to retain external firms to provide the necessary skills from within its countries of operation or from other jurisdictions.

Competitive Conditions

The mineral exploration, development and mining business is a competitive business. The Company competes with numerous other companies and individuals in the search for and the acquisition of financially and geologically attractive mineral properties, as well as prospective land for exploration activities. The Company has historically been successful in identifying these projects and prospective land areas in the countries where it currently operates, but this cannot be assured in the future, and the Company may not be successful in such activities in countries where it does not currently operate. See "Risk Factors".

Operations in the DRC and South Africa

The Company has three key mineral projects, all of which are located in the DRC and South Africa. There are currently no restrictions or conditions that have been imposed by the governments of either country on the Company's ability to operate in the DRC or South Africa, other than the laws of general application. The Company has satisfied itself that it has all current required permits, business licenses and other regulatory approvals to carry out its business in the DRC and South Africa as presently carried out through, among other things, oversight by Qualified Persons, within the meaning of NI 43-101, who have done a review of each of the Projects, and through consultants who are engaged by the Company in the DRC and South Africa. The Company has also retained and consults with local legal counsel in each country. The status of the Company's mineral titles has been confirmed through title reviews and opinions provided by legal counsel in each jurisdiction.

Subsidiary and Joint Venture Operations

Management of the Company directs, and must consent to, all decisions being made at the subsidiary level through the appointment of directors of the subsidiary. As a result, the operations and business objectives of the Company and its subsidiaries are effectively aligned. At the Kamoa-Kakula Project, the operation of Kamoa Holding Limited, a jointly owned entity held 99% between the Company and Zijin Mining is regulated through the SGO Agreement, as defined below, (see "*Material Contracts - Kamoa Holding Shareholder and Governance Agreement*"). At the Kipushi Project, the relationship with Gécamines is regulated through the Kipushi Joint Venture Agreement (see "*Material Contracts – Kipushi Joint Venture Agreement*").

The minute books and corporate records of the Company's subsidiaries and joint ventures are either kept at the offices of local corporate secretarial services, or at the Company's own offices in the respective jurisdictions in which such subsidiaries and joint ventures exist or at the Company's corporate offices in Vancouver, Canada or London, United Kingdom. All disbursements of corporate funds and operating capital to subsidiaries and joint ventures of the Company are reviewed and approved by the Board of the Company or its designees, and are based upon pre-approved budgeted expenditures or pre-approved spending authorities.

The majority of the Company's cash and cash equivalents are kept in bank accounts in Canada. Subsidiary and joint venture bank accounts are funded on an as needed basis only, and only when funds are required to fund approved budgets. All activity in the Company's bank accounts are monitored by the Company's management team.

The Company maintains effective control through its shared services office in Johannesburg, South Africa, where the Company's Chief Financial Officer is situated, through the monitoring of bank

account activity and through the passing of appropriate budgets and resolutions as a shareholder of its subsidiaries and joint ventures.

At this stage in the Company's business, cash is not yet generated from mining operations. All funding comes from, and has come from, the equity capital markets through the Company or the sale of assets. As such, the Company does not require or rely on its foreign subsidiaries to transfer funds to the Company to fund the Company's expenses.

Experience of Directors and Executive Officers in the DRC and South Africa

All of the current members of the Board of the Company have served as directors of the Company for no less than three years, other than Mr. Bianchini. The Executive Chairman, Robert Friedland, has served since 2000 as a director, and has been active in Africa since 1997. These directors and officers in turn impart their experience to other members of the Board and management based in Canada or the United Kingdom. The Company also arranges for site visits to the Projects for the directors and executive officers on a regular basis.

The Company's Chief Executive Officer, Lars-Eric Johansson, has been in that position since 2007. The Company's Chief Financial Officer, Marna Cloete, is based in South Africa and has spent all of her career there, including with the local office of a global accounting and audit firm. The Company's Executive Vice President of Operations, Mark Farren, has more than 22 years of experience in building and operating mines in South Africa and resides in South Africa. In the DRC, the Company's General Manager of the Kamoa-Kakula Project, Louis Watum, has served in various capacities since 2014, and prior to that time Mr. Watum spent eight years assuming progressively senior responsibilities in the DRC's mining sector including the commissioning of Randgold's Kibali Project in DRC. Mr. Watum is fluent in French, the official language of the DRC.

Knowledge of the local business, culture and practices is imparted by these individuals to other directors and officers of the Company. Furthermore, as a result of their frequent visits to the Projects, the Executive Chairman, Chief Executive Officer, Chief Financial Officer and other executives noted above have regular contact with other employees, personnel, government officials and business persons and other locals in the DRC and South Africa. Resulting information is imparted by these individuals to the Board and management, which, as a result, enhances the directors' and executive management's knowledge of local business culture and practices, as well as local legal, accounting and other requirements.

Local Laws and Government Relations

The Company hires and engages local experts and professionals (i.e. legal, accounting, and tax consultants) to advise the Company with respect to current and new regulations in foreign jurisdictions in respect of banking, accounting, financial and tax matters. The Company utilizes large, established and well recognized financial institutions in both Canada and foreign jurisdictions. The Company uses local counsel and local consultants to assist it with its government relations. Members of management of the Company also have good relationships with government officials in the DRC and South Africa.

Enforcement of Judgments

All of the Company's material assets, other than its cash, are located in Africa. An investor's cause of action under Canadian securities laws is against the Company, not against any of its subsidiaries or joint ventures outside of Canada. Accordingly, any investor with jurisdiction to do so is entitled to file suit against the Company in order to exercise its statutory rights and remedies under Canadian securities laws. The location of the assets does not affect this right, although the presence of the Company's cash

resources in Canada would, if any suit were ever successful, provide an investor with the possibility of enforcing against a material pool of assets in Canada. That said, to the extent the Company's cash resources are advanced to the Company's foreign subsidiaries, investors may have difficulty collecting from and enforcing against the Company and its foreign subsidiaries any judgments obtained in Canada.

KAMOA-KAKULA PROJECT

Information in this section of a scientific or technical nature regarding the Kamoa-Kakula Project is based upon, or derived from, the Kamoa-Kakula Technical Report.

DRC Mining Code

Information in this section, including economic analysis, is based upon the 2002 DRC Mining Code, and all of the following references to the "DRC Mining Code" are to the 2002 DRC Mining Code. On March 9, 2018, a law amending the 2002 DRC Mining Code was promulgated (the "**2018 DRC Mining Code**"), which includes changes to the investment framework for mining operators in the DRC, such as royalties, taxation, and other technical matters.

As of the date of this report, the 2018 DRC Mining Code has not been published in the official gazette and the drafting of mining regulations for the implementation of this new law has not been finalized.

Following a meeting between President Joseph Kabila Kabange, senior members of the government and senior representatives of international mining companies that have operations in the DRC, detailed discussions have commenced and are ongoing with the aim of resolving, in a fair and equitable manner, the mining industry's concerns with the DRC 2018 Mining Code.

Project Description and Location

The Kamoa-Kakula Project comprises a newly discovered, very large stratiform copper deposit with adjacent prospective exploration areas, located within the Central African Copperbelt in Lualaba Province, DRC. The Kamoa-Kakula Project lies approximately 25 km west of the town of Kolwezi, and about 270 km west of Lubumbashi. Ivanhoe owns a 49.5% share interest in Kamoa Holding, an Ivanhoe subsidiary that presently owns 80% of the Kamoa-Kakula Project. Zijin Mining owns a 49.5% share interest in Kamoa Holding, which it acquired from Ivanhoe in December 2015 for an aggregate cash consideration of US$412 million. The remaining 1% interest in Kamoa Holding is held by privately-owned Crystal River. See *"Material Contracts – Kamoa Holding Shareholder and Governance Agreement"*. On November 11, 2016, an additional 15% interest in Kamoa Copper was transferred to the DRC by Kamoa Holding. See *"Material Contracts – Kamoa Holding Share Transfer Agreement"*.

The Kamoa-Kakula Project consists of the Kamoa Exploitation Licences (exploitation permits 12873, 13025 and 13026 which cover an area of 397.4 km^2) and one exploration licence (exploration permit 703 covers an area of 12.74 $km^{2)}$. The Kamoa Exploitation Licences, approved August 20, 2012, grant Kamoa Copper 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-Kakula Project resides with Kamoa Copper, a subsidiary of Kamoa Holding, which is the holder of the Kamoa Exploitation Licences.

A number of payments are required to keep each of the Kamoa Exploitation Licences and the remaining exploration permit 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. An additional duty, payable annually to the Cadastre Minier ("**CAMI**"), is levied on the number of quadrangles held. With respect to the remaining exploration permit, 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. Kamoa Copper is also required to submit an annual exploration report outlining

where exploration will take place for the ensuing year. Kamoa Copper paid all fees and filed its annual report in December 2017, which addressed planned exploration activities in 2018.

All work undertaken on the Kamoa-Kakula 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. Where possible, rehabilitation work is carried out progressively during exploration programs and during the development phase. Current environmental and social liabilities relating to Kamoa Copper's exploration and development work are minor and restricted to the vicinity of the exploration camp, box cut and drilling sites.

The Kamoa-Kakula Project area is sparsely inhabited. The Company is preparing and implementing a resettlement plan which will identify any traditional owners within the Kamoa-Kakula Project area but no major resettlement is expected. 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-Kakula 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-Kakula Project. These discussions culminated in Ivanhoe offering to transfer a further 15% interest in Kamoa Copper to the DRC on terms to be negotiated between Ivanhoe and the DRC government. On November 11, 2016, an additional 15% interest in Kamoa Copper was transferred to the DRC by Kamoa Holding. Ivanhoe and Zijin Mining have also indicated their 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 Lualaba Province and adjacent provinces.

Accessibility, Climate, Local Resources, Infrastructure and Physiography

Access to the Kamoa-Kakula Project area from Kolwezi is via unsealed roads. Some of the road network throughout the Kamoa-Kakula 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-Kakula Project area. This railway line is not in a state that would permit its use by Kamoa Copper without significant refurbishment. Portions of the rail line in Angola have been refurbished (Lobito to Luau), and other portions are expected to be upgraded in the future (Luau to Kolwezi).

The Kolwezi area has distinct dry (May to October) and wet (November to April) seasons. Temperatures are generally mild and vary between 17ºC and 26ºC, but can drop to as low as 5ºC 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-Kakula 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-Kakula Project would require the development of attendant infrastructure.

The topography of the Kamoa-Kakula 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-Kakula Project area lies at an altitude of approximately 1,430 m above sea level. There is sufficient area within the defined Kamoa-Kakula Project to accommodate any future mining-related infrastructure such as plant, mine, tailings and waste rock facilities.

History

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

During the period 1971-1975, the Tenke Fungurume Consortium, operating as the Societé 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-Kakula Project during this period.

In 2003, Ivanhoe acquired a significant ground holding, including the permit areas that now comprise the Kamoa-Kakula Project. Work completed to date includes data compilation, acquisition of satellite imagery, geological mapping, stream sediment and soil geochemical sampling, an airborne geophysical survey that collected total field magnetic intensity, horizontal and longitudinal magnetic gradient, multi-channel radiometric, linear and barometric, altimetric and positional data, acquisition of whole-rock major and trace element data from selected intervals of mineralized zone and footwall sandstone in drill hole DKMC_DD019, and aircore, reverse circulation (RC) and core (DDC) drilling.

An initial Mineral Resource estimate was prepared by Amec for the Project in 2009. The estimate has been updated in 2010, 2011, 2012, 2014, 2016, 2017 and 2018.

Geological Setting

Regional Geology

The metallogenic province of the Central African Copperbelt is hosted in metasedimentary rocks of the Neoproterozoic Katanga Basin. The lowermost sequences were deposited in a series of restricted rift basins which were overlain by laterally extensive, organic rich, marine siltstones and shales. These units contain the bulk of the ore deposits within the Central African Copperbelt (Kamoa-Kakula is, however, an exception to this). This horizon is overlain by what became an extensive sequence of mixed carbonate and clastic rocks of the Upper Roan Group (Selley et al., 2005). The Roan Group now forms 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.

The Katangan Basin overlies a composite basement made up of older, multiply-deformed and metamorphosed, intrusions that are mostly of granitic affinity and supracrustal metavolcanic–sedimentary sequences. In Zambia, this basement is mainly Paleoproterozoic in age (2,100–1,900 Ma), whereas in the Kamoa-Kakula region, only Mesoproterozoic basement (~1,100 to 1,300 Ma) is known.

Local and Project Geology

The majority of the Kamoa-Kakula Project area lies on a broad, gentle plateau between two major north–north–east-trending structures. To the east, and identified primarily by airborne magnetics, is the Kansoko Trend which is the interpreted boundary with the External Fold and Thrust Belt. The geology of the Kansoko Trend is currently poorly defined. To the west is a prominent escarpment and magnetic feature named the West Scarp Fault.

The Kamoa-Kakula Project is located in a broadly-folded terrane centered on the Kamoa and Makalu domes between the West Scarp Fault and Kansoko Trend. The domes form erosional windows exposing the redox boundary between the underlying hematitic (oxidized) Roan sandstones, and the overlying carbonaceous and sulphidic (reduced) Grand Conglomerate diamictite (host to mineralization). Unlike the tectonically-dismembered deposits of the Katangan Copperbelt, and the External Fold and Thrust Belt, the host rocks at Kamoa-Kakula are intact and relatively undisturbed.

Mineralization

Mineralization at the Kamoa-Kakula Project has been defined over an irregularly–shaped area of 27 km x 15 km. Mineralization is typically stratiform, and vertically zoned from the base upward with chalcocite (Cu2S), bornite (Cu5, FeS4) and chalcopyrite (CuFeS2). At Kamoa, chalcopyrite is the dominant copper species with lesser bornite and chalcocite whereas at Kakula the dominant copper species is chalcocite. In the Kamoa area 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 0º to 10º near–surface above the Kamoa dome, to 15º to 20º on the flanks of the dome. At Kamoa, mineralization thicknesses at a 1.0% Cu cut–off grade range from 2.3 m to 15.8 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 Kakula, mineralization thicknesses at a 1.0% Cu cut-off grade range from 2.9 m to 42.5 m (for Indicated Mineral Resources). The deposit has been tested locally from below surface to depths of more than 1,000 m, and remains open to the south-east and west.

Mineralization in the majority of the Katangan Copperbelt orebodies such as at those located at Kolwezi and Tenke–Fungurume is oxide in nature and is hosted in the Mines subgroup (R2). The mineralization at Kamoa-Kakula differs from these deposits in that it is primarily sulphide mineralization located in the Grand Conglomerate unit (Ki1.1) at the base of the Lower Kundelungu Group.

Exploration

From commencement of exploration work in 2004 through to the autumn of 2011, Kamoa Holding's DRC exploration was managed and performed by an independent firm, African Mining Consultants, under the supervision of Kamoa Holding. Kamoa Holding subsequently assumed management and operational control of the Kamoa-Kakula 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 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-Kakula area and the data has been compiled to help with geology and structure mapping.

In 2016, Kamoa Holding tested various ground based geophysical techniques in the vicinity of the high grade Kakula trend. This included eight lines of ground based gravity, eight lines of induced polarization (IP) and a single line of natural source audio-frequency magnetotelluric imaging (NSAMT). In late 2017, a gravity survey was flown over the greater Kamoa area, with the results of this survey still being interpreted.

Amec determined that the exploration programs completed to date are appropriate for the Kamoa-Kakula Project and the Kamoa-Kakula Project area remains prospective for additional discoveries of base-metal mineralization around known dome complexes.

Drilling

Kamoa Holding has conducted aircore, rotary air blast, RC, and diamond–drill core drilling campaigns at the Kamoa-Kakula Project since May 2006. As at January 26, 2018, there were 1,587 core holes drilled within the Kamoa-Kakula Project.

The 2017 Kamoa Mineral Resource estimate used 776 drill hole intercepts. Included in the 776 drill holes were 16 twin holes (where the spacing between drill holes is <25 m) and six wedge holes. Although a far greater number of holes have been wedged, the wedges have typically been used in their entirety for metallurgical testing, and have thus not been sampled for resource estimation purposes. In these cases, only the parent hole is used during mineral resource estimation.

The 2018 Kakula Mineral Resource estimate used 271 drill hole intercepts. Only 254 of these occur within the Kakula Indicated and Inferred Resource model perimeter. Three drill holes are located south-west of Kakula West, five drill holes are located around the southern edge of the Inferred outline, and nine drill holes are located north-east of the Inferred outline.

Core drilling was completed by contract drill crews, typically supervised by African Mining Consultants until mid-2011 when Kamoa Holding 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 -40º to vertical. In 2015 Kamoa Holding purchased its own deep drill rigs and now runs 2 Land Cruiser mounted rigs capable of drilling to a depth of 150 m NQ and 2 Dando drill rig capable of drilling to a depth in excess of 600 m HQ.

Core recovery in the mineralized units at Kamoa and Kakula ranges from 0% to 100% and averages 95% at Kamoa. Core recovery data at Kakula is generally very good although a number of minor issues were raised by Amec during their audit. African Mining Consultants established standard logging and sampling conventions and codes for the Kamoa-Kakula Project; drill hole logging was undertaken primarily by African Mining Consultants personnel and since late–2010, by Kamoa Holding personnel. Drilling is ongoing at the Kamoa-Kakula Project.

Sampling, Analysis and Data Verification

Kamoa Holding has established separate sampling programs for its geochemical samples, aircore samples, RC samples and core samples. Kamoa Holding 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.

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 was convenient) above the first presence of mineralization and/or the mineralized zone was sampled on nominal 1 m intervals to the end of the hole, which is generally 5 m below the Ki1.1/R4.2 contact. Most intervals with visual estimates of >0.1% Cu were sampled at 1.5 m intervals or less.

From February 2010 through July 2014, the Kamoa Pyritic Siltstone (KPS, Ki1.1.2) and mineralized basal diamictite were sampled on nominal 1 m sample intervals (dependent on geological controls). The KPS was sampled every 1 m, and composites were made over 3 m for analytical purposes. A 3 m shoulder is sampled above the first visible sign of copper mineralization in each drill hole.

Starting in August 2014, whole core is logged by the geologist on major lithological intervals, until they arrive at mineralized material or at a "Zone of interest" ("**ZI**") such as a lithology that is conventionally sampled (e.g. the Kamoa Pyritic Siltstone). The ZI is logged on sampling intervals, typically 1 m intervals (dependent on geological controls). Within any ZI the geologist highlights material that is either mineralized or material expected to be mineralized and that could potentially support a Mineral Resource estimate. This is highlighted as "Zone of Assay" ("**ZA**") and is extended to 3 m above and below the first sign of visible mineralization.

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-Kakula Project site operated by African Mining Consultants personnel until the autumn of 2011, and subsequently by Kamoa Holding personnel.

Core is cut in half for sampling (along the projected orientation lines) using a standard diamond saw. The one-half core samples not sent for preparation are placed in metal trays and stored at the Kamoa-Kakula Project core shed (official core storage facility). The core storage facility consists of three lockable buildings with 24 hour security personnel in place.

Sawn drill core is sampled on 1-m intervals, or shorter intervals where necessary, to honour geological contacts. The sawn core is then crushed to a nominal 2 mm using jaw crushers. A quarter split (500 g to 1,000 g) is pulverized to >90% -75 μm, using the LM2 puck and bowl pulverizers. The remaining coarse reject material is retained. A 100 g split is sent for assay; three 50 g samples are kept as government witness samples, one 30 g is split for Niton XRF analysis, and approximately 80 g of pulp is retained as a reference sample. Certified reference materials and blanks are included with the sample submissions.

Independent laboratories have been used for primary sample analysis, Genalysis, and Ultra Trace Geoanalytical Laboratory from 2008. Both laboratories are located in Perth, Western Australia, and both have ISO 17025 accreditation. ALS Chemex of Vancouver, British Columbia, acted as the check laboratory for drill core samples from part of the 2009 program and for 2010 through 2016 drilling. ALS Chemex is ISO: 9001:2008 registered and ISO: 17025-accredited.

Analytical methods have changed over the project duration. Samples typically are analyzed for Cu, Fe, As, S, and Ag. A suite of additional elements has been requested, in particular, during the early drilling phases at Kamoa-Kakula. Acid-soluble copper (ASCu) assays have been primarily undertaken at Kamoa-Kakula since 2010. Very few (249 out of 6,640) samples from holes drilled prior to 2010 have ASCu assays. A QA/QC program comprising blank, certified reference materials, and duplicate samples was used on the Kamoa-Kakula 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 Kamoa-Kakula Project facility. 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.

Mineral Resources

Indicated and Inferred Mineral Resources for Kakula have an effective date of February 23, 2018 and are based on 271 mostly vertical drill holes completed by December 31, 2017. Indicated and Inferred Mineral Resources for Kamoa have an effective date of November 27, 2017 and are based on 776 mostly vertical drill holes completed by November 23, 2015. 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 24.9 km^2. Mineral Resources within an area of 70.1 km^2 drilled on 400-m spacing and which display grade and geological continuity were classified as Indicated Mineral Resources.

The Kamoa-Kakula Project Mineral Resources are as follows:

Kamoa-Kakula Project Mineral Resources

(1% Cu Cut-off Grade)

			Vertical		Contained Copper	
Category	Tonnage (Mt)	Area (km^2)	Thickness (m)	Copper (% Cu)	(kt)	(Billion lbs)
Indicated	1,340	70.1	6.9	2.72	36,600	80.7
Inferred	315	24.9	4.6	1.87	5,890	13.0

Notes:

1. Ivanhoe's Mineral Resources Manager, George Gilchrist, Professional Natural Scientist (Pr. Sci. Nat) with the South African Council for Natural Scientific Professions, estimated the Mineral Resources under the supervision of Dr. Harry Parker and Gordon Seibel, both RM of Society of Mining, Metallurgy and Exploration (SME), who are the Qualified Persons for the Mineral Resource estimate. The effective date of the estimate is February 23, 2018. Mineral Resources are estimated using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves. Mineral Resources at Kamoa are inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. No Mineral Reserves are currently estimated at Kakula.
2. Mineral Resources at Kamoa are reported using a total copper (TCu) cut-off grade of 1% TCu and a minimum vertical thickness of 3 m. There are reasonable prospects for eventual economic extraction under assumptions of a copper price of US$3.00/lb; employment of underground mechanized room-and-pillar and drift-and-fill mining methods; and that copper concentrates will be produced and sold to a smelter. Mining costs are assumed to be US$27/t, and concentrator, tailings treatment, and general and administrative costs (G&A) are assumed to be US$17/t. Metallurgical recovery for Kamoa is estimated to average 86% for hypogene and 81% for supergene. At a 1% TCu cut-off grade, assumed net smelter returns for 100% of Mineral Resource blocks will cover concentrator, tailings treatment, and G&A costs.

3. Mineral Resources at Kakula are reported using a TCu cut-off grade of 1% TCu and an approximate minimum thickness of 3 m. There are reasonable prospects for eventual economic extraction under assumptions of a copper price of US$3.00/lb, employment of underground, mechanized, room-and-pillar and drift-and-fill mining methods, and that copper concentrates will be produced and sold to a smelter. Mining costs are assumed to be US$42/t and concentrator, tailings treatment, and G&A costs are assumed to be US$18/t. Metallurgical recovery is assumed to average 85% at the average grade of the Mineral Resource. Ivanhoe is studying reducing mining costs using a controlled convergence room-and-pillar method. At a 1% TCu cut-off grade, assumed net smelter returns for 100% of Mineral Resource blocks will cover concentrator, tailings treatment and G&A costs.
4. Reported Mineral Resources contain no allowances for hangingwall or footwall contact boundary loss and dilution. No mining recovery has been applied.
5. Tonnage and contained-copper tonnes are reported in metric units, contained-copper pounds are reported in imperial units and grades are reported as percentages.
6. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content.

Targets for Additional Exploration

The Kamoa-Kakula Project remains highly prospective for exploration and a number of targets have been identified on the property that require further investigation.

The Kamoa-Makalu exploration target represents the area surrounding the Kamoa Indicated Mineral Resources and Kamoa Inferred Mineral Resources. This target, based on limited drilling and which can only be expressed as a range of tonnage and grade was estimated using an inverse distance weighting and applying a +/-20% variance to the resulting tonnage and grade estimate. The target could contain between 480 and 720Mt grading 1.5% to 2.3% Cu.

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

In addition to the Kamoa-Makalu target area, additional exploration prospects exist including the ~10 km long, eastern boundary of the Kamoa Mineral Resources which 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.

The area immediately surrounding and adjacent to the Kakula Indicated and Inferred Resource remains a key target area for exploration activities in 2018. The western and eastern strike extents of the Kakula zone trend will be targeted as well as areas to the northeast and southwest of Kakula West discovery.

Pre-feasibility Study and Preliminary Economic Assessment

Kamoa-Kakula Project

In November 2017, given the dramatic increase and upgrading of the copper resources delineated at Kamoa-Kakula, Ivanhoe issued the results of the Kamoa 2017 PFS and the Kakula 2017 PEA which reflects the updated development scenarios for the Kamoa-Kakula Project.

The three potential development scenarios examined include:

1. Initial mine development scenario. The Kakula 2017 PEA evaluates the development of a six Mtpa underground mine and surface processing complex at the Kakula Deposit – a discovery announced in early 2016 – as the project's first phase of development.

2. Expanded, two-mine development scenario. The Kakula 2017 PEA also includes an option for an integrated, 12 Mtpa, two-stage development, beginning with initial production from the Kakula Mine, to be followed by a subsequent, separate underground mining operation at the nearby Kansoko Mine, along with the construction of a smelter.

3. Kamoa 2017 pre-feasibility study. The Kamoa 2017 PFS evaluates the development of the Kansoko Mine as a stand-alone six Mtpa underground mine and surface processing complex that would be supplied with ore from the planned development of the Kansoko Sud and Kansoko Centrale areas of the Kamoa Deposit, which were discovered in 2008. The Kamoa 2017 PFS refines the findings of the Kamoa March 2016 PFS, which envisaged a production rate of three Mtpa.

Key initial projections from the Kakula 2017 PEA

The study assesses the potential development of the Kakula Deposit as a six Mtpa mining and processing complex. The Kakula mill would be constructed in two smaller phases of three Mtpa each as the mining operations ramp-up to full production of six Mtpa. The 24-year life-of-mine production scenario provides for 108.4 million tonnes to be mined at an average grade of 5.48% copper, producing 9.4 million tonnes of high-grade copper concentrate, containing approximately 11.4 billion pounds of copper.

The average annual production rate is 246,000 tonnes of copper at a mine site cash cost of US$0.45/lb copper and total cash cost of US$1.08/lb copper for the first five years of operations, and copper annual production of up to 385,000 tonnes by year four.

The estimated initial capital cost, including contingency, is US$1.2 billion. The capital expenditure for off-site power, which is included in the initial capital cost, includes a US$71 million advance payment to the DRC state-owned electricity company, SNEL, to upgrade two hydropower plants (Koni and Mwadingusha) to provide the Kamoa-Kakula Project with access to clean electricity for its planned operations. Mwadingusha is being upgraded first. The work is being led by Stucky Ltd., of Switzerland; the advance payment will be recovered through a reduction in the power tariff.

The economic analysis uses a long-term price assumption of US$3.00/lb of copper and returns an after-tax NPV at an 8% discount rate of US$4.2 billion. It has an after-tax IRR of 36.2% and a payback period of 3.1 years.

The Kakula 2017 PEA envisages a three-year development period, with development of twin underground declines already well underway.

The Kakula 2017 PEA's returns, for the six Mtpa initial development scenario, are set out below at long-term copper prices of $3.00/lb and $3.50/lb.

	Long Term Cu Price	
	$3.00/lb	**$3.50/lb**
Net Present Value (8% discount rate, $ millions)	4,243	5,764
Internal Rate of Return (%)	36.2%	42.8%
Project Payback (years)	3.1	

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

	Total Life of Mine	**Life of Mine Average**
Plant Feed Milled ('000 t)	108,422	4,518
Copper Feed Grade (%)		5.48%

	Total Life of Mine	Life of Mine Average
Copper Recovery (%)		86.9%
Concentrate Produced (‘000 t)	9,400	392
Copper Concentrate Grade (%)		54.9%
Contained Copper in Concentrate (‘000 t)	5,164	215
Contained Copper in Concentrate (Mlb)	11,385	210

	$/lb Payable Copper
Mine Site Cash Costs	0.60
Total Cash Costs	1.23

	Total Life of Mine
Peak Funding ($ millions)	1,135
Initial Capital Costs ($ millions)	1,231
Expansion Capital Costs ($ millions)	318
Sustaining Capital Costs ($ millions)	1,443

Expanded 12 Mtpa development scenario for the Kakula and Kamoa deposits

The Kakula 2017 PEA also assesses the potential development of the Kakula and Kamoa Deposits as an integrated, 12 Mtpa mining and processing complex, built in two stages. This scenario envisages the construction and operation of two separate facilities: first, an initial mining operation would be established at the Kakula Mine on the Kakula Deposit; and then a subsequent, separate mining operation would begin at the Kansoko Mine on the Kansoko Sud and Kansoko Centrale areas of the Kamoa Deposit.

As this two-staged development scenario was based on delineated resources at the time of its announcement, it does not incorporate the mining of any resources that were subsequently delineated at the Kakula West discovery or that may result from the ongoing drilling of high-priority targets located in the untested parts of the Kamoa-Kakula Project area.

Each mining operation is expected to be a separate underground mine with a shared processing facility and surface infrastructure. Included in this scenario is the construction of a direct-to-blister flash copper smelter with a capacity of 690,000 tonnes of copper concentrate per annum.

As the resources at the Kakula and Kansoko Mines are mined out, production would begin at Kamoa North to maintain throughput of 12 Mtpa to the then existing concentrator and smelter complex.

The 44-year life-of-mine production scenario provides for 444.3 million tonnes to be mined at an average grade of 3.79% copper, producing 34.2 million tonnes of copper concentrate, of which 24.5 million tonnes is smelted internally and 9.7 million tonnes is sold to external smelters. This produces approximately 21.0 billion pounds of blister copper and 10.6 billion pounds of copper in concentrate.

The estimated average annual production rate is 370,000 tonnes of copper at a mine site cash cost of US$0.63/lb copper, inclusive of smelter costs of US$0.09/lb, and total cash cost of US$1.02/lb copper, after sulphuric acid credits, for the first ten years of operations, and recovered copper annual production of up to 542,000 tonnes by year nine.

Given that the first phase of development is the same as the Kakula 2017 PEA development scenario, estimated initial capital cost, including contingency, is approximately the same at US$1.2 billion. Expansion capital is then funded from internal cash flows.

The economic analysis uses a long-term price assumption of US$3.00/lb of copper and returns an after-tax NPV at an 8% discount rate of US$7.2 billion. It has an after-tax IRR of 33.0% and a payback period of 4.7 years.

The Kakula 2017 PEA's returns, for the expanded 12 Mtpa scenario, are set out below at long-term copper prices of $3.00/lb and $3.50/lb.

	Long Term Cu Price	
	$3.00/lb	**$3.50/lb**
Net Present Value (8% discount rate, $ millions)	7,179	9.808
Internal Rate of Return (%)	33.0%	39.6%
Project Payback (years)	4.7	

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

	Total Life of Mine	**Life of Mine Average**
Plant Feed Milled ('000 t)	444,276	10,097
Copper Feed Grade (%)		3.79%
Copper Recovery (%)		86.0%
Concentrate Produced ('000 t)	34,206	777
Concentrate Smelted ('000 t)	24,461	556
Concentrate Sold ('000 t)	9,744	221
Copper Concentrate Grade (%)		42.3%
Cont. Copper in Blister ('000 t)	9,505	216
Cont. Copper in Blister (Mlb)	20,955	476
Cont. Copper in Concentrate ('000 t)	4,820	110
Cont. Copper in Concentrate (Mlb)	10,627	242

	$/lb Payable Copper
Mine Site Cash Costs	0.78
Total Cash Costs (After Credits)	1.20

	Total Life of Mine
Peak Funding ($ millions)	1,139
Initial Capital Costs ($ millions)	1,235
Expansion Capital Costs ($ millions)	3,647
Sustaining Capital Costs ($ millions)	5,133

Summary of the key results for the Kamoa 2017 PFS

In addition to the PEA, a pre-feasibility study was completed for the development of a six Mtpa Kansoko Mine at the Kamoa Deposit. This refines the findings of the Kamoa March 2016 PFS, which envisaged a production rate of three Mtpa.

The Kamoa 2017 PFS is based entirely on the Kamoa 2017 PFS Mineral Reserve, details of which are shown in a section below. The Kamoa 2017 PFS re-assesses the development of the Kamoa Deposit as a stand-alone six Mtpa mining and processing complex. The 26-year life-of-mine production scenario schedules 125.2 million tonnes to be mined at an average grade of 3.81% copper, producing 11.4 million tonnes of high-grade copper concentrate, containing approximately 9.2 billion pounds of copper.

The estimated average annual production rate is 178,000 tonnes of copper at a mine site cash cost of US$0.57/lb copper and total cash cost of US$1.44/lb copper for the first ten years of operations, and

annual copper production of up to 245,000 tonnes by year seven. The estimated initial capital cost, including contingency, is US$1.0 billion.

The economic analysis uses a long-term price assumption of US$3.00/lb of copper and returns an after-tax NPV at an 8% discount rate of US$2.1 billion, an increase of 110% compared to the after-tax NPV8% of US$986 million that was projected in the Kamoa 2016 PFS. It has an after-tax IRR of 24.2% and a payback period of 5.0 years.

The Kamoa 2017 PFS's returns, at a production rate of six Mtpa, are set out below at long-term copper prices of $3.00/lb and $3.50/lb.

	Long Term Cu Price	
	$3.00/lb	**$3.50/lb**
Net Present Value (8% discount rate, $ millions)	2,063	3,126
Internal Rate of Return (%)	24.2%	30.5%
Project Payback (years)	5.0	

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

	Total Life of Mine	**Life of Mine Average**
Plant Feed Milled ('000 t)	125,182	4,815
Copper Feed Grade (%)		3.81%
Copper Recovery (%)		87.5%
Concentrate Produced ('000 t)	11,405	439
Copper Concentrate Grade (%)		36.6%
Contained Copper in Concentrate ('000 t)	9,211	354
Contained Copper in Concentrate (Mlb)	4,178	161

	$/lb Payable Copper
Mine Site Cash Costs	0.64
Total Cash Costs	1.51

	Total Life of Mine
Peak Funding ($ millions)	1,070
Initial Capital Costs ($ millions)	1,004
Expansion Capital Costs ($ millions)	348
Sustaining Capital Costs ($ millions)	1,334

Planned Mining Operations: Kamoa 2017 PFS

The Kamoa 2017 PFS includes a Probable Mineral Reserve of approximately 125.2 million tonnes grading at 3.81% Cu, and has been defined in multiple mining zones to support a six Mtpa production rate over a 26-year mine life. The PFS targets the Kansoko Sud and Kamoa Centrale areas of the Kamoa resource. These ore zones occur at depths ranging from approximately 60 m to 1,235 m. Access to the mine will be via twin declines. The room and pillar ("**R&P**") mining method will be used for areas between 60 m and 150 m and the control convergence room and pillar ("**CCR&P**") mining method will be used for mineralized zones below 150 m. The methods were modified from previous studies.

The production development of the R&P mining method will be carried out in a grid-like fashion, using 7 m wide drifts. The room development will run parallel to the strike of the panel for dips less than 20 degrees, with belt drives running at an acute angle to the room drifts. Where the dip is greater than 20

degrees, the rooms will be developed slightly off strike, to accommodate the acute angle between the room development and the belt drives.

The CCR&P mining method is a form of room and pillar mining that includes a second phase of pillar reduction after the cut line has advanced. The in-panel pillars are designed in post destructive state allowing most of the pillars to be trimmed by mechanical means ensuring controlled excavation and monitoring of the convergence process. This method is productive and provides very good extraction rates at relatively low costs. The CCR&P mining method has been successfully implemented by KGHM at its copper-mining operations in Poland for the past 20 years. Ivanhoe engaged KGHM Cuprum R&D Centre Ltd. to study the applicability of this method for the Kamoa 2017 PFS. The results of the study indicate that the Kamoa Deposit is suited to the application of the CCR&P mining method.

The CCR&P mining method will be used in the mineralization zones below 150 m. An initial panel will be taken as a trial panel to further define the design criteria, operational procedures, and geotechnical monitoring programs. The production schedule is based on mining 70% of the trail panel prior to commencing additional CCR&P panels.

The development schedule focuses on the establishment of necessary mine services and support infrastructure to set up the initial mining areas and ramp up to six Mtpa of ore production and associated development waste. The development schedule is broken down into the following three main phases:

- Phase 1: Development of the declines to the main ore bins;
- Phase 2: Room and pillar mining and controlled convergence room and pillar trial panel; and
- Phase 3: Development of Kamoa Centrale and Kansoko Sud mining areas.

The production will ramp up over a five year period achieving full production by year six. The schedule maintains full production for 17 years with an overall mine life of 26 years. The schedule is developed to mine a portion of the ore tonnes from Kansoko Sud while the majority of the ore production is from the Kamoa Centrale mining area.

Planned Mining Operations: Kakula 2017 PEA

Similar to Kamoa, the Kakula Deposit is planned to be accessed via twin declines, which are under construction. Mining methods in the Kakula 2017 PEA are assumed to be a combination of drift-and-fill ("**D&F**") utilizing paste backfill and CCR&P. Mine production ramps up consistently over a four year period to achieve steady-state production, with a 24 year mine life in total.

The twin declines are designed at -17% gradient and 1,500 m in length providing access to the ore body. One decline is dedicated to transporting personnel and equipment and the second is designed to accommodate a conveyor. The conveyor decline is wide enough for equipment to travel next to the conveyor providing one way traffic flow in and out of the mine. Material mined will be hauled to the transfer points and then transported by conveyor to surface.

D&F mining utilizing paste backfill was selected as the mining method for the thick, higher-grade areas. This method was selected to maximize the extraction of the Mineral Resource where the selected mining height is greater than six metres and multiple mining lifts are required to achieve maximum extraction. The D&F method also has a greater amount of flexibility related to challenges that will be encountered such as steeply dipping portions of the deposit and ground water.

CCR&P was selected as the mining method for the areas of the Mineral Resource between three and six metres in thickness. Similar to Kamoa, Ivanhoe engaged KGHM Cuprum R&D Centre Ltd. to conduct a validation study for the suitability of CCR&P for the Kakula Deposit, including geotechnical drilling

and testwork which compared the rock properties and geotechnical parameters between Kakula and the KGHM ore body in Poland. The results of the study were positive indicating that the method can be applied to Kakula.

For the Kakula 2017 PEA, 66% of the tonnes are mined using D&F, 28% are mined using CCR&P, with the remaining 7% being development tonnes.

Kamoa 2017 PFS Mineral Reserves

The Company has declared an initial Probable Mineral Reserve of 125.2 million tonnes at a grade of 3.81% copper using an elevated net smelter return ("**NSR**") cut-off of $100/t. The Mineral Reserve is based on the November 2017 Mineral Resource. The Mineral Reserve is entirely a Probable Mineral Reserve that was converted from Indicated Mineral Resources.

The Kamoa-Kakula Project Mineral Reserves are as follows:

Kamoa-Kakula Project Mineral Reserve Statement

Category	Tonnage (Mt)	Copper (% Cu)	Contained Copper (kt)	Contained Copper (Million lbs)
Proven Mineral Reserve	-	-	-	-
Probable Mineral Reserve	125.2	3.81	4,774	10,525

Notes:

1. Effective date of the Mineral Reserve is November 28, 2017.
2. The copper price used for calculating the financial analysis is long-term copper at US$3.00/lb. The analysis has been calculated with assumptions for smelter refining and treatment charges, deductions and payment terms, concentrate transport, metallurgical recoveries and royalties.
3. For mine planning, the copper price used to calculate block model Net Smelter Returns was US$3.00/lb.
4. An elevated cut-off of US$100.00/t NSR was used to define the stoping blocks. A cut-off of US$80.00/t NSR was used to define ore and waste for the mine plan.
5. Indicated Mineral Resources were used to report Probable Mineral Reserves.
6. The Mineral Reserves reported above are not additive to the Mineral Resources.

Mineral Processing, Metallurgical Testwork and Concentrator Design

Between 2010 and 2015, a series of metallurgical test work programs were completed on drill-core samples of known Kamoa copper mineralization. These investigations focused on metallurgical characterization and flow-sheet development for the processing of hypogene and supergene copper mineralization.

In 2016, further bench-scale metallurgical flotation test work was carried out at XPS Consulting and Testwork Services laboratories in Falconbridge, Ontario, Canada. This test work was conducted on composite samples of drill core from the Kansoko Sud and Kansoko Centrale areas in the southern part of the Kamoa Mineral Resource area. The flowsheet developed was suited for the fined grained nature of the material and yielded positive results. Test work on a composite grading 3.61% copper produced a copper recovery of 85.4% at a concentrate grade of 37.0% copper. The second composite, grading 3.20% copper, produced a copper recovery of 89.2% at a concentrate grade of 35.0% copper using the same flowsheet.

Additional bench-scale metallurgical flotation test work was carried out in 2016 on two chalcocite-rich composites from the Kakula Deposit at a Zijin Mining laboratory in Xiamen, China, and by XPS Consulting and Testwork Services. The initial composite, grading 4.1% copper, produced a copper recovery of 86% at a concentrate grade of 53% copper at the Zijin Mining laboratory in July 2016. The

second composite, grading 8.1% copper, produced a recovery of 87% at an extremely high concentrate grade of 56% copper. The flotation tests were conducted using the circuit developed during the 2016 Kamoa pre-feasibility study.

Average arsenic levels in the concentrate were measured to be approximately 0.02%, which is significantly lower than the limit of 0.5% imposed by Chinese smelters. Extremely low arsenic levels in concentrate are expected to attract a premium from copper-concentrate traders.

The concentrator design incorporates a run-of-mine stockpile, followed by primary and secondary crushing on surface. The crushed material with a design-size distribution of 80% passing (or P80) nine millimetres (mm), is fed into a two-stage ball-milling circuit for further size reduction to a target grind size p80 of 53 micrometres (µm). The milled slurry will be passed through a rougher and scavenger flotation. The high-grade, or fast-floating rougher concentrate, and medium-grade, or slow-floating scavenger concentrate, will be collected separately. The rougher concentrate is upgraded in two stages to produce a high-grade concentrate. The medium-grade scavenger concentrate and tailings from the two rougher cleaning stages, representing approximately 25% of the feed mass, will be combined and re-ground to a P80 of 10µm before being cleaned in two stages. The cleaned scavenger concentrate then will be combined with the cleaned rougher concentrate to form the final concentrate. The final concentrate will be thickened before being pumped to the concentrate filter where the filter cake then will be bagged for shipment to market.

Direct-to-blister Flash Smelter

Under the 12 Mtpa scenario examined in the Kakula 2017 PEA, the construction of a direct-to-blister flash (DBF) smelter is envisaged, subject to further study on feasibility, scale and timing. Flash smelting is typically advantageous compared to other technologies as the energy costs are relatively low.

The smelter is designed with a capacity of 690,000 tonnes of concentrate, and would operate at full capacity fed by Kamoa-Kakula copper concentrates until the end of the mine life. Concentrate would be first dried and sent to the DBF where it is smelted in the reaction shaft with oxygen-enriched air to produce molten slag containing oxide minerals, blister copper and SO2-rich off-gas. The oxidation reactions provide sufficient heat required to melt the charge, although a small amount of external fuel is used for process control purposes. Molten slag and blister copper collect in the DBF furnace settler and are intermittently tapped via dedicated tapholes. The slag is reduced in two electric slag cleaning furnaces operating in series to recover copper in the form of blister and alloy, respectively. The SO2-rich off-gas is de-dusted, dried and sent to a double-contact-double-adsorption acid plant for production of high strength sulphuric acid which is sold to the local market.

An on-site smelter offers numerous cost savings, including on treatment charges, certain royalties and transportation costs, particularly for the lower-grade copper concentrates from the Kansoko and Kamoa North mines. In addition, the sale of the sulphuric acid byproduct would generate additional revenue. Sulphuric acid is in short supply in the DRC, and is imported for use in processing ore from oxide copper deposits.

Infrastructure

As the Kamoa-Kakula 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, Kamoa Copper contemplates developing power, transportation, water, housing and other ancillary infrastructure.

Kamoa Holding is in the process of securing sources of power through a joint development with SNEL, the state power company of the DRC. In June 2011, a memorandum of understanding (the "**SNEL MOU**") with SNEL was executed 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 Kamoa Holding through a loan to SNEL although the projects will be jointly developed by SNEL and Kamoa Holding. The loan will be repaid by SNEL through a deduction from the monthly power bills incurred over the life of the loan. The SNEL MOU contemplates that following such an upgrade, Kamoa Holding 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 SNEL 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 exclusive right to conduct full rehabilitation on both the Mwadingusha and Koni plants.

In April 2013, a further memorandum of understanding with SNEL was signed to upgrade a third hydroelectric power plant, Nzilo 1, to its design capacity of 111 MW. Similar to the June 2011 SNEL MOU, Kamoa Holding would finance the refurbishment of Nzilo 1 through a repayable loan to SNEL and SNEL would grant Kamoa Holding a priority entitlement to power from the power grid. Nzilo 1, Mwadingusha and Koni could produce a combined total of up to 200 MW, which is believed to be sufficient for the infrastructure contemplated in a subsequent, expansion 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 and associated nearby transmission lines and substations. Finally, transmission lines which run within 10 km of the Kamoa-Kakula Project, have now been extended to the Kamoa-Kakula Project.

In January 2018, the Company announced the completion of three of six generators at Mwadingusha has increased interim power output to 32 MW – 45% of the plant's designed capacity of 71 MW – with the remaining three generators due to be upgraded and fully operational by the end of 2019.

A phased logistics solution is proposed in the Kakula 2017 PEA. Initially, the corridor between southern DRC and Durban in South Africa is viewed as the most attractive and reliable export route. As soon as the railway between Kolwezi and Dilolo, a town near the DRC-Angolan border, is upgraded, the Kamoa-Kakula Project's production is expected to be transported by rail to the Atlantic port of Lobito in Angola. In addition, there is the potential to negotiate off-take arrangements with smelters in Zambia.

Water is abundant in the area and Kamoa Copper 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.

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

Markets and Contracts

To date, Kamoa Holding has not advanced contract and market studies, apart from an initial analysis of the potential sale of concentrate to Zambian and international smelters. Kamoa Holding continues to maintain a dialogue with numerous smelters in the region.

Environmental, Social and Community

The Company conducted an environmental baseline study that analyzed environmental, biological, social and cultural heritage issues. As the Kamoa-Kakula Project is a sparsely inhabited greenfields project, to date no significant environmental, social or community risks have been identified.

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. Companies that are the holders of mining rights are subject to corporate tax at 30%.

From January 2014, the minimum amount of tax payable by mining companies in a year is 1% of the calculated revenue for that specific year ("**Minimum Tax Amount**"). Mining companies in a loss position during a specific year will still be liable for the Minimum Tax Amount. In addition, mining companies whose tax liability is less than the Minimum Tax Amount in a specific year will still be liable for the Minimum Tax Amount.

If no income is earned during the exploration and development period, exploration and development expenditure incurred may only be deducted for tax purposes once production begins. The aggregate exploration expenditure may be claimed as an equal deduction over a two year period once production commences. To the extent that the deduction creates an assessed loss ("**Exploration/Development Loss**"), the loss should be ring-fenced and may be utilized in subsequent years without any time limitation. This DRC law was amended in January 2016 to limit the utilization of Exploration/Development Losses to 60% of the net income (calculated by deducting all acceptable expenditures and depreciation of fixed assets from gross income derived during a year of assessment) in subsequent years.

Companies in an assessed loss position arising from operational activities may carry forward these assessed losses for five years upon receipt of prior approval from the tax authorities. The utilization of operating assessed losses is also limited to 60% of the net income in subsequent years. The 60% limitation applies to the cumulative loss of a company (i.e. operational losses and Exploration/Development losses).

Non-mining assets are depreciated in accordance with the common law. Specific mining assets dedicated to mining operations with useful lives of between four 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 four 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, companies 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 on mineral oils (i.e. fuels) for which they are exempted. The rates vary from 3% to 40%.

Provincial Taxes

Haut-Katanga Province has imposed a provincial tax of $100 per tonne on copper and cobalt concentrate products destined for export. 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 Capitalization

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 Haut-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.

Project Development

Following the publication of the Kakula 2017 PEA, a six Mtpa Kakula PFS is underway, with completion targeted for the second half of 2018. In addition, following the announcement of an expanded Mineral Resource for Kakula, including Kakula West, on February 26, 2018, work commenced on an update to the Kamoa-Kakula development plan, to include the expanded Mineral Resources in future mine planning.

The Kakula box cut was successfully completed on October 26, 2017, and the first blast for the twin declines at Kakula took place on November 16, 2017. The Kakula decline development work is being undertaken by JMMC, a DRC subsidiary of JCHX Mining Management of Beijing, China. Depending on ground conditions, the 3,600-metre decline development contract is scheduled for completion around the end of 2018.

Underground development work on the twin declines at Kakula is progressing according to plan. Each decline has been advanced more than 330 metres, approximately 20% of the projected total distance.

In addition to the declines, other project development works planned for 2018 include the construction of a mine access road from Kolwezi airport as well as other surface infrastructure at the Kakula camp.

PLATREEF PROJECT

Information in this section of a scientific or technical nature regarding the Platreef Project is based upon or derived from, the Platreef Technical Report.

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 two contiguous properties (or "farms"), Turfspruit (241 KR) and Macalacaskop (243 KR), which comprise, in aggregate, approximately 7,842 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, which is adjoining the Turfspruit farm to the east) and AMK (at Macalacaskop farm). Mineral Resources for the Platreef Project are stated only for the UMT deposit. The UMT deposit is further subdivided into the material within and adjacent to grade shells in the Turfspruit Cyclic Unit ("**TCU**"), the UMT-TCU deposit, material within and adjacent to grade shells in the Bikkuri Reef, the UMT-BIK deposit and material within grade shells in the footwall of the TCU, the UMT-FW 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.

Ivanplats, a subsidiary of the Company, holds the Platreef Mining Right on the Turfspruit and Macalacaskop properties, which comprise substantially all of the Platreef Project. The DMR granted Ivanplats its Platreef Mining Right on May 30, 2014 and the Platreef Mining Right was formally activated on November 4, 2014 when the DMR notified the Company that the Platreef Mining Right had received the required notarial execution.

Ivanhoe owns 64% of the Platreef Project through its subsidiary, Ivanplats, and is directing all mine development work. The South African beneficiaries of the approved broad-based, black economic empowerment structure have a 26% stake in the Platreef Project and the remaining 10% is owned by a Japanese consortium of Itochu Corporation; JOGMEC; ITC Platinum, an Itochu affiliate; and Japan Gas Corporation. See *"Material Contracts – Consolidated Investors' Agreement and BEE Transaction"*.

Itochu, together with ITC Platinum acquired the interest in the Platreef Project 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.

To maintain title in good standing Ivanhoe and/or Ivanplats, in respect of the mining right at the Turfspruit and Macalacaskop farms, must comply with relevant obligations and programs approved in support of the Platreef Mining Right application as well as the conditions associated therewith and any subsequent amendments thereto.

A number of permits are 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 agreement.

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 also are listed in the EIA regulations (such as road and power line construction, waste disposal and storage of hazardous substances). Environmental authorization from the relevant provincial environmental department has been obtained following the execution of the Platreef Mining Right.

All work undertaken on the Platreef Project to date has been performed under applicable licences and/or rights. Drill site rehabilitation work was carried out progressively during the exploration programs, and at program completion. Shaft 1 construction is being developed under the Platreef Mining Right which was executed in November 2014. Current environmental and social liabilities relating to Ivanhoe's exploration work have been, to date relatively minor.

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 a 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. 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 land, over which the Mineral Mining Right MPT No. 01/2017 (MR) is held, is owned by the State and held in trust for the respective communities. The Ga-Madiba, Masodi, Masehlaneng, Maroteng, Moshate, Mahwelereng (A, B, C), Pholar Park, Parkmore, Mountain View, and Michelle communities are the lawful occupiers of the Macalacaskop 243 KR farm, and the Tshamahansi (Hlongwane, Baloyi and Matjeke), Ga-Kgobudi, Masodi, and Ga-Magongoa communities are the lawful occupiers of the Turfspruit 241 KR farm. Should any open-pit mining operation (of the AMK and/or ATS deposits) be considered a significant community resettlement would be required. A relatively modest resettlement would be required for underground mining at the UMT-TCU deposit (considered in the Platreef FS).

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 and related mine infrastructure within the mining right area.

Electrical energy, telephone service, and other infrastructure components are available in Mokopane and are sufficient for exploration and development 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. 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 mining right has a statutory right to use the land for mining. Prior to commencing 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 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, at the time 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 is available to Ivanhoe. Ivanhoe acquired a prospecting permit for Macalacaskop and Turfspruit in February 1998.

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 (the UMT program) commenced in 2007 and was completed in February 2015. It has resulted in discovery of the UMT deposit and in 2010, the Flatreef portion.

In 2012 the Merensky Reef analogue was recognized.

In April 2016 the resources on the project were updated to take account of additional drilling and a significant geological reinterpretation, resulting from a 3-D seismic survey and a program of re-logging all of the UMT holes. This resource estimate was prepared as the basis for the Platreef Feasibility Study, which was finalized and published on September 4, 2017.

Geological Setting

Regional Geology

The Platreef Project is located within the northern limb of the Palaeoproterozoic (2.06 Ga) Bushveld Complex, the world's largest layered intrusion (up to 7 km thick and over 65,000 km^2 in area) and host to approximately 70% 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.

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 gabbronorites; and (v) the Upper Zone, which includes ferrogabbros with variable amounts of magnetite.

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 floor rocks.

Within the Platreef Project area, the magmatic strata of the Upper Critical Zone ("**UCZ**") on the project has locally been subdivided into different major magmatic cyclic units which correlate well with the UCZ rock sequence described for the main Bushveld Complex. The TCU is the main mineralized cyclic unit; this unit is analogous to the Merensky Cyclic Unit (MCU) that hosts the Bushveld's principal mineralized reefs. The TCU is laterally continuous across large parts of the Platreef Project area. Mineralization in the TCU shows generally good continuity and is mostly confined to pegmatoidal orthopyroxenite and harzburgite.

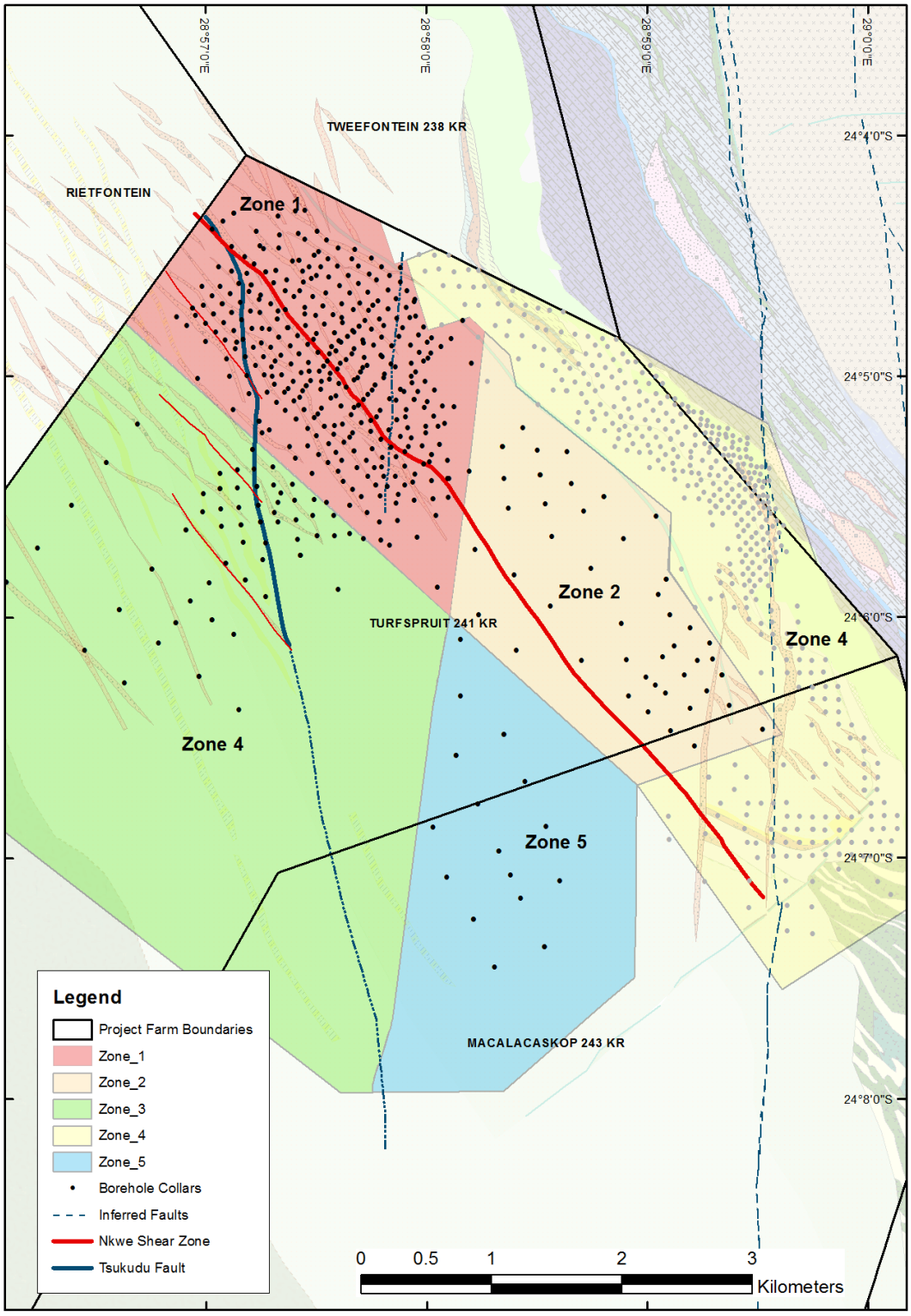
Other cyclic units that have been identified adjacent to the TCU are the Norite Cycles (NC1 and NC2), and the UG2. Below the UG2 two additional magmatic units have been recognized, the Pyroxenite-Norite-Zone (PNZ) thought to represent the lower critical zone and the Lower Zone (LZ) thought to represent the Lower zone of the Bushveld Complex.

Contamination of the UCZ units by assimilation of Transvaal Supergroup metasedimentary rocks can occur within any of the stratigraphic horizons; however, in the area being considered for underground mining, contamination is predominantly confined to the units below the TCU.

A geographical demarcation of the Platreef Project area into five zones (Zone 1 to Zone 5 (Madiba), as noted in Figure 1) has been developed based on exploration criteria. Three distinct geological features are recognized within these zones and include the following:

- A double reef package informally termed the Bikkuri Reef, wherein an upper pyroxenite-dominated mineralized sequence (the Bikkuri Reef) is separated from a thicker, mixed-lithology sequence by Main Zone (MZ) and metasedimentary lithologies.
- Presence of a flat-lying portion of the TCU (Flatreef) that is related to structural controls.
- Local mineralization in the footwall to the TCU.

Figure 1 Project Exploration Zones Plan



Platreef Project Structural Geology

A revised structural model was developed during 2015 and 2016 for the Platreef Project. The model includes three key deformation features:

- Folding – Pre-Bushveld low amplitude, upright open folds defined by remnant metasedimentary interlayers and xenoliths which are parallel to mineralized zones.
- Ductile shear zones – 30 cm to 3 m wide, northwest trending, steeply dipping (60° to 70°), oblique reverse sense of movement, variable dip direction, possible antithetic riedel shear zones;
- Brittle fault zones – 5 m to 30 m wide, north trending, moderate to steeply dipping (50° to 70°), extensional (east block down) normal faults.

Six faults are used to define seven fault blocks for the refined structural model. The majority of the recognized faults appeared as ductile structures however a significant brittle deformation zone is also recognized that crosses Zone 1 from south to north.

Two fold orientations have been observed, and these concur with the previous northern limb studies. The first and major fold orientation (F1) is NNW-SSE. These folds have subsequently been gently refolded with the minor fold axis (F2) trending ENE-WSW. The F1 folds are responsible for the apparent flattening of the Platreef basinward, the Macalacaskop syncline, the so called "T1-trough" and the overall 50° dip to the southwest along the open-pit fold limb. The minor folds are responsible for domes and basins within the larger folds such as the Bikkuri dome.

Broadly, Zone 1 or the 'Flatreef' can be envisioned as a monocline or parasitic fold on a major NNW-trending, SW-dipping fold limb. Syn-magmatic sagging or uplift due to crustal loading and volume increase may have locally amplified the synclines and anticlines respectively.

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 geologists constructed a series of nested grade shells to help with constraining grade estimation with the TCU at the Platreef Project. Grade shells were constructed for both the T1 (T1MZ) and T2 (T2MZ) mineralized zones. The 1+2+3 g/t 3PE+Au grade shell for the T2MZ can be as much as 93.4 m in vertical thickness and averages 24.7 m. In comparison the 2+3 g/t 2PE+Au shell averages 15.0 m and the 3 g/t 2PE+Au shell averages 9.0 m.

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 re-

commenced in 2007 was completed in 2015. Exploration programs have been performed by Ivanhoe personnel (i.e. geological mapping, drill hole planning and logging) or contractors (i.e. drilling activities by Rosond Pty Ltd of Johannesburg, geophysical surveys by Fugro Airbourne Surveys Ltd, Gap Geophysics Pty Ltd of Johannesburg and the Council for Geoscience of South Africa).

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 utilized at the Platreef Project have included aeromagnetics, gravity gradiometer and a number of downhole geophysical methods.

In 2012, Ivanhoe acquired 130 km^2 of Falcon gravity data that was then geologically-constrained and inverted by Dr Nick Williams of Ivanhoe Australia Ltd. Using proprietary algorithms the Falcon data supplements previous geophysical work conducted in the Platreef Project area and indicates that the Flatreef could potentially extend to the south of Zone 1 for >3 km.

A 3-D seismic survey was run by seismic specialist company CGG, headquartered in Paris, France, in the fourth quarter of 2013 for the purpose of confirming and enhancing the structural interpretation in the planned initial production area in Zone 1. The survey included a number of vertical seismic profiles ("**VSP**"). In the first quarter of 2015, Velsis (Pty) Ltd of Brisbane, Australia reprocessed the 3-D seismic data acquired by CGG. The result of this work was a depth-converted volume constrained by the VSP data. The depth converted volume was used in conjunction with detailed geological logs and other geophysical tools to develop the current structural model at Platreef.

Drilling

Drilling on the project has been undertaken in two major phases: one from 2001 to 2003, which focused on the ATS and AMK deposits, and one from 2007 to 2015 that focused 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 areas from 2001 to 2003. A total of 578 drill holes (196,213 m) were completed.

2007 - *2015 (UMT deposit) Drill Program (Phase II)*

Deep drilling on the UMT deposit commenced in April 2007 and was completed in February 2015. As of the Platreef resource estimate data cut-off date of July 24, 2015, Ivanhoe had completed 574 UMT drill holes for a total of 501,638 m. Depths for deflections are calculated based on point of defection and do not include the mother or pilot hole portion. This includes 33 drill holes and deflections (9,181 m) completed for geotechnical purposes and 62 drill holes and deflections (23,001 m) completed for metallurgical sampling purposes.

Standardized geological logging conventions were used to capture information from drill core. Geotechnical logging has been undertaken on selected drill cores. In the majority of instances, core recovery is 100%. The recoveries substantially decrease within faulted/sheared zones.

The UMT deposit Indicated Mineral Resources were drilled on approximately 100 x 100 m spacing, while Inferred Mineral Resources were drilled on 400 x 400 m (locally to 400 x 200 m and 200 x 200 m) spacing.

The UMT drill program has shown the Platreef extends to at least a depth of 1,525 m and that the Platreef is 300m to 600m thick at Turfspruit 241 KR.

Sampling Method and Analysis

Sampling

Over the duration of Ivanhoe's work programs, sample preparation and analyses were performed by accredited independent laboratories. Sample preparation is accomplished by Set Point Laboratories in Mokopane. Sample analyses have been accomplished by Set Point Laboratories ("**Set Point**") in Johannesburg, Lakefield Laboratory (now part of the SGS Group) in Johannesburg, Ultra Trace Geoanalytical Laboratory ("**Ultra Trace**") in Perth, Genalysis, Perth and Johannesburg, SGS Metallurgical Services ("**SGS**") in South Africa, Acme Laboratories ("**Acme**") in Vancouver, and ALS Chemex in Vancouver. Bureau Veritas Minerals Pty Ltd ("**Bureau Veritas**") assumed control of Ultra Trace during June 2007 and is responsible for assay results after that date.

Sample Preparation

Sample preparation and analytical procedures for samples that support Mineral Resource estimation have followed similar protocols since 2001. The preparation and analytical procedures are in line with industry-standard methods for Pt, Pd, Au, Cu, and Ni deposits. Drill programs included insertion of blank, duplicate, standard reference material, and CRM samples. The QA/QC program results do not indicate any problems with the analytical protocols that would preclude use of the data in Mineral Resource estimation.

Ivanhoe also performed bulk density sampling during its drill programs.

Assaying

Bureau Veritas, formerly Ultra Trace, was the primary laboratory used for Platreef assays. Ni, Cu, Cr and S use a multi-acid digestion followed by ICP-OES finish, sulphur may also be determined by Leco. Pt, Pd and Au are determined by fire assay using a lead collector and ICP-MS finish. Historically, samples within a 2 g/t 3PE+Au grade shell were selected and analyzed for Rh. The current practice requires samples containing greater than 1 g/t Pd to be submitted for Rh analysis. Rh is determined by fire assay using lead collection and palladium secondary collection followed by ICP-MS finish. For comparison purposes, approximately every 20th sample would also be assayed by fire assay with nickel sulphide collection followed by ICP-MS.

Set Point was used as an additional assay laboratory for portions of 2011. Pt, Pd, and Au are determined by fire assay using a lead collector and ICP-MS finish. Cu and Ni are determined by multi acid digestion followed by ICP-OES. Sulphur was determined by Leco. Rh, Pt and Au was determined using a palladium collector and ICP-MS finish.

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.

Mineral Resource Estimates

Ivanhoe is focusing on the Platreef Project's Mineral Resources amenable to underground selective mining methods within and adjacent to the TCU. The Company has defined additional selectively mineable underground resources that are exclusive of the TCU resources. These resources are now included in the consolidated Mineral Resource estimate but are not currently considered in development studies. Three individual Mineral Resource estimates make up the consolidated Mineral Resource:

- TCU Mineral Resources amenable to selective mining methods occur below the 650-m elevation (approximately 500-m depth) and near the stratigraphic top of the Platreef. Mechanized drift-and-fill, bench-and-fill and long-hole stoping are being contemplated. Components of the TCU and adjacent material were modelled deterministically. Two main mineralized zones were modelled using three internal grade shells with nominal 3PE+Au cut-off grades of 1 g/t, 2 g/t, and 3 g/t. The term 3PE includes platinum + palladium + rhodium. This Mineral Resource model and validations were completed in September 2015.

- Bikkuri area Mineral Resources amenable to selective mining methods occur within and adjacent to 3PE+Au grade shells in the Bikkuri Reef. They are supported by the UMT–BIK model, completed in September 2015.

- UMT-FW Mineral Resources amenable to underground mining using selective and locally, possibly less selective mining methods consist of mineralization that occurs in the footwall to the TCU and that shows a degree of grade continuity. This Mineral Resource estimate has been estimated using revised geological interpretations for the footwall strata occurring immediately beneath the TCU in Zone 1. The Mineral Resources amenable to underground mining methods in the footwall to the TCU are supported by the UMT–FW model, completed in February 2016.

Platreef Mineral Resources, All Mineralized Zones, April 2016

(2g/t 3PE+Au cut/off grade)

Tonnage and Grades

Class	Mt	Pt (g/t)	Pd (g/t)	Au (g/t)	Rh (g/t)	3PE+Au (g/t)	Cu (%)	Ni (%)
Indicated	346	1.68	1.70	0.28	0.11	3.77	0.16	0.32
Inferred	506	1.42	1.46	0.26	0.10	3.24	0.16	0.31

Total Metal Content

Class	Pt (Moz)	Pd (Moz)	Au (Moz)	Rh (Moz)	3PE+Au (Moz)	Cu (Mlbs)	Ni (Mlbs)
Indicated	18.7	18.9	3.1	1.2	41.9	1,226	2,438
Inferred	23.2	23.8	4.3	1.6	52.8	1,775	3, 440

1) Mineral Resources have an effective date of 22 April 2016. The Qualified Persons for the estimate are Dr Harry Parker, RM SME, and Mr Timothy Kuhl, RM SME. Mineral Resources are reported inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

2) The 2 g/t 3PE+Au cut-off is considered the base case estimate.

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 x 400 m (locally to 400 x 200 m and 200 x 200 m) spacing.
4) Reasonable prospects for eventual economic extraction were determined using the following assumptions. Assumed commodity prices are Pt: $1,600/oz, Pd: $815/oz, Au: $1,300/oz, Rh: $1,500/oz, Cu: $3.00/lb and Ni: $8.90/lb. It has been assumed that payable metals would be 82% from smelter/refinery and that mining costs (average $34.27/t) and process, G&A, and concentrate transport costs (average $15.83/t of mill feed for a four Mtpa operation) would be covered. The processing recoveries vary with block grade but typically would be 80%–90% for Pt, Pd and Rh; 70-90% for Au, 60-90% for Cu, and 65-75% for Ni.
5) 3PE+Au = Pt + Pd + Rh + Au.
6) Totals may not sum due to rounding.

Targets for Additional Exploration

Beyond the current Mineral Resources, mineralization is open to expansion to the south and west. Targets for further exploration (exploration targets) have been identified. Amec cautions that 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.

Four exploration targets have been identified. Target areas are defined based on the 2016 UMT-TCU Mineral Resource Model, and represent currently undrilled extension areas from the model.

- Target 1 could contain 100 to 165 Mt grading 3.1 to 5.2 g/t 3PE+Au (1.3 to 2.2 g/t Pt, 1.5 to 2.5 g/t Pd, 0.18 to 0.30 g/t Au, 0.12 to 0.21 g/t Rh), 0.10 to 0.17% Cu, and 0.22 to 0.36% Ni over an area of 4.1 km2. The tonnage and grades are based on intersections of 2 g/t 3PE+Au mineralization in drill holes located adjacent to the target.

- Target 2 could contain 50 to 90 Mt grading 2.9 to 4.9 g/t 3PE+Au (1.3 to 2.1 g/t Pt, 1.4 to 2.3 g/t Pd, 0.19 to 0.31 g/t Au, 0.11 to 0.18 g/t Rh), 0.11 to 0.19% Cu, and 0.23 to 0.39% Ni over an area of 3.3 km2. The tonnage and grades are based on intersections of 2 g/t 3PE+Au mineralization in drill holes located adjacent to the target.

- Target 3 could contain 20 to 30 Mt grading 2.6 to 4.4 g/t 3PE+Au (1.2 to 1.9 g/t Pt, 1.2 to 2.0 g/t Pd, 0.19 to 0.32 g/t Au, 0.10 to 0.16 g/t Rh), 0.12 to 0.20% Cu, and 0.23 to 0.39% Ni over an area of 0.5 km2. The tonnage and grades are based on intersections of 2 g/t 3PE+Au mineralization in drill holes located adjacent to the target.

- Target 4 could contain 10 to 20 Mt grading 2.1 to 3.4 g/t 3PE+Au (1.0 to 1.6 g/t Pt, 0.9 to 1.4 g/t Pd, 0.13 to 0.22 g/t Au, 0.10 to 0.17 g/t Rh), 0.09 to 0.15% Cu, and 0.19 to 0.32% Ni over an area of 1.5 km2. The tonnage and grades are based on intersections of 2 g/t 3PE+Au mineralization in drill holes located adjacent to the target.

Beyond these exploration target areas there are approximately 48 km^2 of unexplored ground on the property under which prospective stratigraphy is projected to lie. It is not possible to estimate a range of tonnages and grades for this ground.

There is potential for the extent of known mineralization to significantly increase with further step-out drilling to the southwest.

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.

2017 Feasibility Study

In July 2017, Ivanhoe issued the results of a Feasibility Study on the Platreef Project (the "**Platreef FS**"), which analyzes part of the Mineral Resource amenable to underground selective mining methods within and adjacent to the TCU mineralized zones.

The Platreef FS considers the first phase of potential development for an underground mine and the concentrator processing facility.

Ivanhoe plans to develop the Platreef Mine in three phases: an initial annual rate of four Mtpa to establish an operating platform to support future expansions; followed by a doubling of production to eight Mtpa; and then a third expansion phase to a steady-state 12 Mtpa. 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, as described in the Platreef FS, includes the construction of a concentrator and other associated infrastructure to support a start-up to production at a nominal plant capacity of four Mtpa. 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 is anticipated to 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 require further analysis.

Assuming long term commodity prices of $1,250/oz platinum, $825/oz palladium, $1,300/oz gold, $7.60/lb nickel, $3.00/lb copper and $1,000/oz rhodium and a South African Rand to U.S. dollar exchange rate of 13:1, the economic analysis returns an after tax net present value at an 8% discount rate of $916 million, an after tax internal rate of return of 14%, a payback period of five years, and life-of-mine average total cash cost, after credits, of $326/oz 3PE+Au.

The Platreef FS after tax financial results are set out in the table below.

		4 Mtpa
Net Present Value (8%)	**(US$M)**	**916**
IRR		**14.2%**
Project Payback Period	**(Years)**	**5.3**

The following table sets out the average annual production results over the 31 year mine life.

Item	**Units**	**Total**
Mined and Processed	Mtpa	3.90
Platinum	g/t	1.95
Palladium	g/t	2.01
Gold	g/t	0.30
Rhodium	g/t	0.14
3PE+Au	**g/t**	**4.40**
Copper	%	0.17

Nickel	%	0.34

Recoveries		
Platinum	%	87.4
Palladium	%	86.9
Gold	%	78.6
Rhodium	%	80.5
Copper	%	87.9
Nickel	%	71.9
Concentrate Produced		
Concentrate	ktpa	174
Platinum	g/t	38.2
Palladium	g/t	39.1
Gold	g/t	5.3
Rhodium	g/t	2.4
3PE + Au	**g/t**	**85.1**
Copper	%	3.3
Nickel	%	5.5
Annual Recovered Metal		
Platinum	koz	214
Palladium	koz	219
Gold	koz	30
Rhodium	koz	14
3PE + Au	**koz**	**476**
Copper	Mlb	13
Nickel	Mlb	21

1. 3PE+Au is the sum of the grades for Pt, Pd, Rh, and Au.
2. Production over 32 years.

The following table sets out the estimated average operating costs.

	US$/oz of 3PE+Au		
	Life-of-Mine Average	**5-Year Average**	**10-Year Average**
Mine Site Cash Cost	399	442	392
Realisation	340	267	304
Total Cash Costs Before Credits	739	709	696
Nickel Credits	334	305	306
Copper Credits	79	71	71
Total Cash Costs After Credits	326	333	319

1. Totals may vary due to rounding.

Mining

The Platreef FS evaluates a four Mtpa production-rate scenario, to mine a portion of the UMT-TCU Indicated Mineral Resources at the Platreef Project.

Mining will be performed using highly productive mechanized methods, including long-hole stoping and drift-and-fill. Each method will utilize cemented backfill for maximum ore extraction. The current mine plan has been improved over the Platreef PFS mine plan by optimizing stope design, employing a declining net smelter return strategy and targeting higher-grade zones early in the mine life. This strategy has increased the grade profile by 23% on a 3PE+Au basis in the first 10 years of operation and 10% over the life of the mine. It has also modified the top cut development approach to dramatically reduce the amount of ore development on the critical path, and the ratio of ore development to long-hole stoping.

Mining zones in the current Platreef mine plan occur at depths ranging from approximately 700 metres to 1,200 metres below surface. Primary access to the mine will be by way of a 1,104-metre-deep, 10-metre-diameter production shaft (Shaft 2). Secondary access to the mine will be via a 980-metre-deep, 7.25-metre-diameter ventilation shaft (Shaft 1), which is under construction. During mine production, both shafts also will serve as ventilation intakes. Three additional ventilation exhaust raises (Ventilation Raise 1, 2, and 3) are planned to achieve steady-state production.

The ore will be hauled from the stopes to a series of internal ore passes and fed to the bottom of Shaft 2, where it will be crushed and hoisted to surface.

Three main access levels will be established as primary haulage levels. These are the 750 m, 850 m, and 950 m haulage levels. Mining access ramps will connect the haulage levels with the mining sublevels and other infrastructure. The mining sublevels will be developed from the ramps at regular vertical intervals in the production areas. Drilling and extraction levels for stopes will be driven from the sublevels. Ventilation raises and ore passes will also connect the sublevels with the main haulage levels.

Long-hole stopes were designed at a 20 m height, to improve the overall grade of the mine plan. All long-hole stoping will be a transverse mining method using 6 m wide top cuts.

Mineral Reserves

The Company has declared an increased Probable Mineral Reserve of 17.6 million ounces of platinum, palladium, rhodium and gold, using a declining NSR cut-off of $155/t $80/t. The Mineral Reserve estimate for Platreef was based on the Mineral Resource reported above. Only Indicated Resources have been used for determination of the Probable Mineral Reserve.

Platreef Probable Mineral Reserve – Tonnage and Grades as at May 24, 2017.

Method	Mt	NSR ($/t)	Pt (g/t)	Pd (g/t)	Au (g/t)	Rh (g/t)	3PE+Au (g/t)	Cu (%)	Ni (%)
Ore Development	11.1	159.9	1.96	2.05	0.30	0.14	4.45	0.17	0.35
Long-hole	93.1	152.1	1.88	1.95	0.29	0.13	4.25	0.16	0.33
Drift-and-fill	20.4	182.0	2.28	2.23	0.37	0.15	5.03	0.18	0.37
Total	**124.7**	**157.7**	**1.95**	**2.01**	**0.30**	**0.14**	**4.40**	**0.17**	**0.34**

Platreef Probable Mineral Reserve – Contained Metal as at May 24, 2017.

Method	Mt	Pt (Moz)	Pd (Moz)	Au (Moz)	Rh (Moz)	3PE+Au (Moz)	Cu (Mlb)	Ni (Mlb)
Ore Development	11.1	0.7	0.7	0.1	0.05	1.6	42	85
Long-hole	93.1	5.6	5.8	0.9	0.4	12.7	333	681
Drift-and-fill	20.4	1.5	1.5	0.2	0.1	3.3	83	167
Total	**124.7**	**7.8**	**8.0**	**1.2**	**0.5**	**17.6**	**457**	**932**

1. Mineral Reserves have an effective date of May 24, 2017. The Qualified Person for the estimate is Jon Treen (Stantec), P. Eng., with Professional Engineers of Ontario.
2. A declining NSR cut-off of $155/t to $80/t was used for the Mineral Reserve estimates.
3. The NSR cut-off is an elevated cut-off above the marginal economic cut-off.
4. Metal prices used in the Mineral Reserve estimate are as follows: US$1,600/oz platinum, US$815/oz palladium, US$1,300/oz gold, US$1,500/oz rhodium, US$8.90/lb nickel and US$3.00/lb copper.
5. Metal-price assumptions used for the DFS economic analysis are as follows: US$1,250/oz platinum, US$825/oz palladium, US$1,300/oz gold, US$1,000/oz rhodium, US$7.60/lb nickel and US$3.00/lb copper.
6. Tonnage and grade estimates include dilution and mining recovery allowances.
7. Total may not add due to rounding.
8. 3PE+Au = platinum, palladium, rhodium and gold.

Based on the cut-off grade and mining criteria applied to the Platreef resource model, the Probable Mineral Reserve will support a 32-year mine life at a steady-state production rate of four Mtpa. The Mineral Reserve at four Mtpa only includes a third of the Mineral Resource estimate above an $80 per tonne NSR cut-off, which provides an opportunity to ramp-up production in future.

Mineral Processing and Metallurgical Testwork

There have been a number of metallurgical testwork campaigns and conceptual flow sheet designs carried out for the treatment of Platreef samples since 2001. Metallurgical testwork focused on maximizing recovery of 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 testwork 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, a deep drilling exploratory program was launched, and the Mineral Resource was updated to include the deeper higher-grade PGE material.

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

Between 2010 and November 2014, a series of metallurgical testwork campaigns were carried out on the Platreef mineralized material. This Phase 1 to Phase 6 testing included comminution characterization, bench scale flotation testing and laboratory scale dewatering test work. The findings from this Phase 1 to Phase 6 testing was presented in the Platreef PFS.

Metallurgical test work has focused on maximizing recovery of platinum-group elements (PGE) and base metals, mainly nickel, while producing an acceptably high-grade concentrate suitable for further processing and/or sale to a third party. The three main geo-metallurgical units and composites tested produced smelter-grade final concentrates of approximately 85 g/t PGE+Au at acceptable PGE recoveries. Test work also has shown that the material is amenable to treatment by conventional flotation without the need for mainstream or concentrate ultrafine re-grinding. Extensive bench scale

testwork comprising of open circuit and locked cycled flotation testing, comminution testing, mineralogical characterization, dewatering and rheological characterization was performed at Mintek in South Africa, which is an internationally accredited metallurgical testing facility and laboratory.

Comminution and flotation testwork has indicated that the optimum grind for beneficiation is 80% passing 75 micrometres. Platreef ore is classified as being 'hard' to 'very hard' and thus not suitable for semi-autogenous grinding; a multi-stage crushing and ball-milling circuit has been selected as the preferred size reduction route.

Improved flotation performance has been achieved using high-chrome grinding media as opposed to carbon steel media. The inclusion of a split-cleaner flotation circuit configuration, in which the fast-floating fraction is treated in a cleaner circuit separate from the medium- and slow-floating fractions, resulted in improved PGE, copper and nickel recoveries and concentrate grades.

All mined material would be hoisted to the surface via the production shaft and then transported via overland conveyor to the crushing plant. As with the Platreef PFS, a two-phased development approach was used for the Platreef FS flow sheet design. The selected flow sheet comprises a common four Mtpa, three-stage crushing circuit, feeding crushed material to two parallel milling-flotation modules, each with a nominal capacity of two Mtpa. Flotation is followed by a common concentrate thickening, concentrate filtration, tailings disposal and tailings-handling facility.

Given the size and potential of the Platreef resource, with the potential to expand up to a steady-state production rate of 12 Mtpa, Shaft 2 has been engineered with a crushing and hoisting capacity of six Mtpa.

This allows for a relatively quick and capital-efficient first expansion of the Platreef Project to six Mtpa by increasing underground development and commissioning a third, two Mtpa processing module and associated surface infrastructure as required.

A further expansion to more than eight Mtpa would entail converting Shaft 1 from a ventilation shaft into a hoisting shaft. This would require additional ventilation exhaust raises, as well as a further increase of underground development, commissioning of a fourth, two Mtpa processing module and associated surface infrastructure.

Infrastructure

While the Platreef Project is a greenfield project, it is located in South Africa, which is a well-established mining jurisdiction. 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.

The ORWRDP 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 onward 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 ORWRDP.

The bulk water requirement for the first phase of development is projected to peak at approximately 7.5 million litres per day, which is expected to be supplied by the water network. Ivanhoe also is

investigating various alternative sources of bulk water, including an allocation of bulk grey-water from a local source.

On February 24, 2017, the five-million-volt-ampere (MVA) electrical power line connecting the Platreef site to the South African public electricity utility (Eskom) was energized and now is supplying electricity to Platreef for shaft sinking and construction activities. The new power line, a collaboration between Platreef, Eskom and the Mogalakwena Local Municipality, also established a platform to provide energy to the neighbouring community of Mzombane, which previously was without electricity reticulation and supply.

Platreef's electrical power requirement for the initial, four Mtpa, underground mine, concentrator and associated infrastructure has been estimated at approximately 100 MVA. An agreement has been reached with Eskom for the supply of phase-one power. Ivanhoe chose a self-build option for permanent power that will enable the company to manage the construction of the distribution lines from Eskom's Burutho sub-station to the Platreef Mine.

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. The South African National Roads Agency is considering two options with regards to the N11 highway. The first option is to upgrade the existing road through Mokopane, to cater for the increased traffic volumes. These upgrades are ongoing and included the new Platreef Mine intersection which was successfully completed in August 2016. The second option is to re-route the N11 highway, exiting the N1 north of Mokopane and entering the existing N11 approximately five km north of the Platreef Project area. 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

Pre-production capital costs for the initial development of mining operations, concentrator and ancillary on-site facilities, including contingency, have been estimated to amount to approximately $1.5 billion.

Sustaining capital expenditure is estimated to be an additional $0.4 billion, spread over the 32 year mine life.

Total pre-production and sustaining capital costs, including contingency.

US$M	Pre-Production	Sustaining	Total
Mining			
Geology	12	9	20
Mining	779	349	1,129
Capitalised Operating Costs	63	–	63
Subtotal	**854**	**358**	**1,213**
Concentrator & Tailings			
Concentrator & Tailings	240	6	246
Subtotal	**240**	**6**	**246**
Infrastructure			
Infrastructure	230	23	253
Site Costs	9	3	11

Capitalised Operating Costs	36	–	36
Subtotal	**275**	**26**	**300**
Owners Cost			
Owners Cost	44	8	52
Closure	1	16	17
Subtotal	**45**	**24**	**69**
Capex Before Contingency	**1,413**	**414**	**1,827**
Contingency	131	3	135
Capex After Contingency	**1,544**	**418**	**1,962**

1. Sustaining capital expenditure also includes 2023 construction capital expenditure.
2. Totals vary due to rounding.

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 $326 per payable ounce of 3PE+Au on average over the life of the mine.

Sensitivity Analysis

The Platreef PFS returns a net present value (after tax) of $916 million, assuming long term commodity prices and a South African Rand to U.S. dollar exchange rate of 13:1, at an 8% discount rate. The after tax internal rate of return is 14% and the payback period is five years. Set forth below is a summary of these amounts as well as net present values (before and after tax) at alternative discount rates:

	Discount Rate	**Before Taxation**	**After Taxation**
Net Present Value (US$M)	Undiscounted	8,897	6,471
	5.0%	2,794	1,961
	8.0%	**1,392**	**916**
	10.0%	838	500
	12.0%	461	217
Internal Rate of Return		16.2%	14.2%
Project Payback Period (Years)		5.2	5.3

A sensitivity of net present value and IRR to commodity prices and South African rand exchange rate is shown in the table below:

		Change in Commodity Prices (+/- %)				
	ZAR: USD	-28%	-12%	**0%**	+12%	+28%
		Implied Platinum Price (US$ per ounce)				
		900	1,100	**1,250**	1,400	1,600
$NPV_{8\%}$ (US$M)	9:1	-844	-290	94	466	962
		(2.7%)	*(6.3%)*	*(8.5%)*	*(10.5%)*	*(12.9%)*
	11:1	-301	209	580	952	1,446
		(5.9%)	*(9.4%)*	*(11.6%)*	*(13.7%)*	*(16.2%)*
(IRR)	**13:1**	48	544	**916**	1,286	1,779
		(8.4%)	*(11.9%)*	***(14.2%)***	*(16.4%)*	*(19.0%)*
	15:1	295	791	1,161	1,530	2,017
		(10.5%)	*(14.1%)*	*(16.5%)*	*(18.7%)*	*(21.3%)*
	17:1	483	979	1,347	1,713	2,202
		(12.3%)	*(16.0%)*	*(18.5%)*	*(20.8%)*	*(23.5%)*

Markets and Contracts

Concentrate off-take discussions are underway with several South African PGM smelters. The Company has received indications of interest from a number of these parties. Internal studies forecast sufficient smelting capacity in South Africa for the first phase of production from the Platreef Project. Several off-take agreements may have to be negotiated to achieve optimal terms for the Platreef Project. Technical discussions have begun with the objective of finalizing one or more off-take agreements before the production of first concentrate. The Platreef FS is based on a treatment and refining charge for PGMs, nickel and copper of 18% of gross sales.

Environment, Social and Community

The Platreef Project site lies in a north-westerly direction, approximately 8 km from the town of Mokopane. There are several communities within the proposed project area that are affected by the Platreef Project.

Baseline studies have been undertaken within the Platreef Project area, in support of an Environmental Impact Assessment ("**EIA**"), which was part of the Platreef Mining Right Application that was submitted on 6 June 2013. The EIA was conducted to comply with local legislation as well as international requirements and included studies on topography, heritage and archaeology, aquatic ecology and wetlands, fauna and flora, dust monitoring (air quality), noise assessment, soils and land capability, visual assessment, socio-economic assessment and resettlement action plan framework. To date, two amendments to the environmental authorisation have been approved by the regulatory authority, and a third amendment application is currently pending approval.

The Platreef Project will contribute to the local economy through both direct and indirect employment opportunities and will stimulate the economy of the Mogalakwena local municipal area. In addition, there will be an increase in opportunities for local suppliers of goods and services to the operation. In general, the socio-economic conditions in the area will be improved through enhanced infrastructure, local economic development projects, enterprise development, broad-based black economic empowerment ownership and projects and other corporate social responsibility initiatives of the Company.

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 to 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 trading 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 such 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 unrefined minerals is a percentage determined as:

Royalty % = 0.5 + [EBIT/(Gross Sales * 9)] * 100, with a maximum of 7%, for production of unrefined minerals, including a PGE+Au, nickel and copper concentrate.

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. VAT will increase to 15% as of April 1, 2018. 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)).

Project Development

Shaft 1 will provide access to the Flatreef deposit and enable the initial underground development to take place during the development of Shaft 2. The average sinking rate is between 40 to 50 metres a month. The main sinking phase is expected to reach its projected, final depth of 980 metres below surface in 2019. Shaft stations to provide access to horizontal mine workings for personnel, materials, pump stations and services will be developed at depths of 450 metres, 750 metres, 850 metres and 950 metres, below surface.

The permanent sinking phase, which started in July 2016, has reached a total depth of 722 metres. The first off-shaft lateral development on the 450-metre-level, which will serve as an intermediate water pumping and shaft cable-termination station, was successfully completed in September 2017. The next off-shaft lateral development will be on the 750-metre-level and will serve as the first mine working level. The 750-metre-level station development is expected to be completed by September 2018.

A geotechnical drill hole drilled vertically below Shaft 1 indicates that the shaft will intersect the upper contact of the Flatreef deposit at an approximate shaft depth of 783 metres. The grade for the T1 mineralized zone at this location is 4.83 grams per tonne (g/t) 3PE+Au, 0.33% nickel and 0.15% copper over a vertical thickness of 12 metres.

Shaft 2, to be located approximately 100 metres northeast of Shaft 1, will have an internal diameter of 10 metres, will be lined with concrete and sunk to a planned, final depth of more than 1,104 metres below surface. It will be equipped with two 40-tonne rock-hoisting skips with a capacity to hoist a total of six Mtpa of ore. The early-works for Shaft 2 include the excavation of a surface box cut to a depth of approximately 29 metres below surface and the construction of the concrete hitch (foundation) for the 103-metre-tall concrete headgear (headframe) that will house the shaft’s permanent hoisting facilities and support the shaft collar. The box cut excavations commenced in January 2018 and are expected to complete in December 2018.

KIPUSHI PROJECT

Information in this section of a scientific or technical nature regarding the Kipushi Project is based upon or derived from, the Kipushi Technical Report.

DRC Mining Code

Information in this section, including economic analysis, is based upon the 2002 DRC Mining Code, and all of the following references to the "DRC Mining Code" are to the 2002 DRC Mining Code. On March 9, 2018, a law amending the 2002 DRC Mining Code was promulgated (the "2018 DRC Mining Code"), which includes changes to the investment framework for mining operators in the DRC, such as royalties, taxation, and other technical matters.

As of the date of this report, the 2018 DRC Mining Code has not been published in the official gazette and the drafting of mining regulations for the implementation of this new law has not been finalized.

Following a meeting between President Joseph Kabila Kabange, senior members of the government and senior representatives of international mining companies that have operations in the DRC, detailed discussions have commenced and are ongoing with the aim of resolving, in a fair and equitable manner, the mining industry's concerns with the DRC 2018 Mining Code.

Property Description and Location

The Kipushi Project is located adjacent to the town of Kipushi in the southern Haut-Katanga Province in the DRC, adjacent to the border with Zambia. The town of Kipushi is situated approximately 30 km southwest of Lubumbashi, the provincial capital. The Kipushi Mine is a past-producing, high-grade underground copper-zinc mine in the Central African Copperbelt, which operated from 1924 until 1993 when, due to a combination of economic and political factors, the mine was put on care and maintenance. The mine produced approximately 60 Mt at 6.78% Cu and 11.03% Zn including, from 1956 through 1978, approximately 12,673 tonnes of lead and 278 tonnes of germanium.

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 and associated minerals 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, notably through an exploitation permit 12434, which is valid until April 3, 2024 and covers approximately 505 hectares. This permit is renewable under the terms of the DRC Mining Code.

Exploitation permit 12434, issued by Ministerial Order No. 0290/CAB.MIN/MINES/01/2011 dated July 2, 2011 and evidenced, in accordance with DRC Mining Code, by exploitation certificate No. CAMI/CE/6368/11 dated July 22, 2011, granted KICO the exclusive right to perform, during its period of validity, exploration works, development works and exploitation works (including mining and processing) for the following mineral substances from the Kipushi Project: copper, cobalt, silver, germanium, lead and zinc. Exploitation permit 12434 resulted from the partial transfer of exploitation permit 481 previously held by Gécamines.

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. Pursuant to the DRC

Mining Code, exploitation permit 12434 also enables KICO, without limitation, to (i) enter into the exploitation perimeter to proceed to mining operations, (ii) build the facilities and infrastructure necessary to mining exploitation; (iii) use water and wood resources located within the mining perimeter for the needs of mining exploitation subject to compliance with the norms defined in the environmental impact study and project environmental management plan and (iv) proceed to the works of the extension of the mine.

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. In addition, a number of assets are rented by Gécamines to KICO, under a lease agreement that was the subject of a settlement agreement dated June 14, 2013, including the high-voltage station, the potable water pumping station, and certain other buildings and workshops required for the running of the mine.

The property was the subject of an in situ environmental audit from the Environmental Department of the Ministry of Mines (DPEM) in August 2011. On August 20, 2011, the DPEM thus granted Gécamines a certificate of release of its environmental obligations within the perimeter of exploitation permit 12434. The Company commissioned a summary environmental baseline study which was completed by Golder Associates in August 2012. It serves as an "environmental snapshot" as to the state of the property when Ivanhoe acquired the Kipushi Project in November 2011.

As a general rule, an annual payment is required to maintain the validity of exploitation permits. This payment is based on the number of quadrangles held by permit type (surface rights fee), as set out in the DRC Mining Code. However, considering the flooding of the Kipushi Mine and dewatering after a power shortage, KICO applied for the approval of an event of force majeure concerning exploitation permit 12434. On the basis of this application, KICO obtained from CAMI on April 2, 2012, a decision approving the force majeure evoked by KICO. The event of force majeure will end when the mine and its facilities have been refurbished. As a result, exploitation permit 12434 is currently still under a situation of approved force majeure in accordance with the DRC Mining Code. On the basis of Article 287 of the DRC Mining Code, force majeure is a valid rationale for justifying the absence of payment of the annual surface rights fees.

In addition, pursuant to the Kipushi Joint Venture Agreement and in consideration of the consumption of minerals, KICO shall pay quarterly to Gécamines a net turnover royalty of 2.5%. However, pursuant to a loan agreement relating to the financing of Gécamines' social program ("**Social Loan**") entered into on November 12, 2010, Gécamines accepted that the Social Loan will be reimbursed by way of an offset to the royalties owed by KICO. Thus, until the Social Loan has been repaid in full (including accrued interest), the royalty will be payable by way of offset against amounts owed by Gécamines under the Social Loan.

Accessibility, Climate, Local Resources, Infrastructure and Physiography

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 were kept on to keep the mine secure and many of these people still live in the area. As of December 31, 2017, KICO employed approximately 487 people.

The Lubumbashi region is characterized by a humid subtropical climate with warm rainy summers and mild dry winters. Most rainfall occurs during summer and early autumn (November to April) with an average annual rainfall of 1,287 mm. Average annual maximum and minimum temperatures are 28°C

and 14°C respectively. 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. P5 Shaft is 1,240 m deep with a lowest operating level at the 1150 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 P5 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 water level rose to 851 mL at its peak. Since Ivanhoe assumed responsibility for ongoing rehabilitation and pumping, the water level has been lowered to and stabilized at ~1230 mL in P5 Shaft (below the 1150 mL haul way) and at ~1300 mL on the Cascades Shaft #1 Tertiary.

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. The surface infrastructure is owned by Gécamines.

The re-establishment of operations at the Kipushi Project would require refurbishment of underground access via the P5 Shaft, and construction of new processing and tailings 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.

Between 1974 and 1993, Gécamines drilled a total of 762 holes between 850 and 1,270 metre-levels for a total of 93,000 m (Kelly et al., 2012). Approximately 7,500 samples were submitted to the mine laboratory for routine analysis. As at 1993, exploration drilling had traced the main Kipushi Fault Zone to approximately 1,600 metre-level. The Big Zinc was investigated by diamond drilling carried out by Gécamines between 1990 and 1993. Mineralization below 1,150 metre-level was largely explored through the drilling of about 200 cored drill holes from two drill drives located in the hanging wall of the deposit at 1,132 metre-level and 1,272 metre-level The Big Zinc zone was intersected by 84 of these holes. There was also some underground sampling between 1,150 metre-level and 1,295 metre-level. On 1,270 metre-level, holes were drilled to intersect the Fault Zone and the Big Zinc on fans at 15 m spaced sections with holes inclined at between -25° and -90°. On the basis of a limited number of deeper holes, Gécamines extrapolated its estimates of grade and tonnage down to the 1,800 metre-level.

Geological Setting

Regional Geology

Kipushi is located within the Central African Copperbelt in a northerly convex arc extending approximately 500 km from north central Zambia through the southern part of the DRC into Angola. The Central African Copperbelt constitutes a metallogenic province that hosts numerous world-class copper-cobalt deposits both in the DRC and Zambia. The Central African Copperbelt lies within the Lufilian Arc, a Pan-African age fold and thrust belt developed between the Congo Craton to the northwest and the Kalahari Craton to the southeast. The Lufilian Arc itself is composed of a 5-10 km thick sequence of metasedimentary rocks comprising the Katanga Supergroup. The Katanga Supergroup is subdivided into three major stratigraphic units: the basal Roan, the middle Nguba (formerly known as the Lower Kundulungu) and the uppermost Kundulungu Groups.

Local and Property Geology

The mineralization at Kipushi comprises sulphide replacement bodies within the Kakontwe Sub-Group dolomites and Série Récurrente Sub-Group dolomitic shales of the Nguba Group. Two zones of zinc-rich mineralization occur (the Big Zinc Zone and the Southern Zinc Zone) adjacent to the copper-rich Fault Zone mineralization. The Fault Zone strikes north-northeast to south-southwest and dips

approximately 70° to the west. The Big Zinc forms an irregular, steeply-dipping pipe-like body in the immediate footwall to the Fault Zone, the Southern Zinc runs along the footwall of the Fault Zone between -1,150-metre and -1,300-metre levels. A second zone of copper-rich mineralization occurs in the Série Récurrente which strikes from east to west, is sub-vertical and plunges steeply to the west. Where the Fault Zone and Série Récurrente meet, mineralization tends to be enhanced in a sub-zone known as the Nord Riche. A sub-vertical copper-zinc-germanium-rich sulphide zone occurs as a splay from the Fault Zone at depth toward the south west, and has been named the Fault Zone Splay. Significant concentrations of lead, silver, cobalt and germanium occur in variable amounts in all zones.

Exploration

The Kipushi Deposit has largely been mined from surface down to approximately the 1150 mL. Recent exploration activities at Kipushi have been limited to underground drilling of the various mineralized zones from the footwall ramp and the hanging wall drift developed by Gécamines on the 1272 mL.

Mineralization

Mineralization at the Kipushi Project is generally copper-dominant or zinc-dominant with minor areas of mixed copper-zinc mineralization. Pyrite is present in some peripheral zones and forms massive lenses, particularly in the Kipushi Fault Zone. Copper-dominant mineralization in the form of chalcopyrite, bornite and tennantite is characteristically associated with dolomitic shales both within the Kipushi Fault Zone and extending eastwards along, and parallel to, bedding planes within the Katete Formation (Série Récurrente). Zinc-dominant mineralization in the Kakontwe Formation occurs as massive, irregular, discordant pipe-like bodies completely replacing the dolomite host and exhibiting a structural control. These bodies exhibit a steep southerly plunge from the fault zone and Série Récurrente contacts where they begin, to their terminations at depth within the Kakontwe Formation.

Drilling

Since acquiring the Kipushi Mine, Ivanhoe has conducted two phases of underground exploration drilling. The first phase was completed in October 2015 and consisted of 25,419 m of drilling in 97 holes. This drill program was developed to confirm Gécamines historical drill results on the Big Zinc and to expand the project resource base. The drill program resulted in defining current NI 43-101 compliant Mineral Resources on the Big Zinc Zone, Fault Zone and Série Recurrent Zone.

In 2017 an additional 9,706 metres of drilling was completed in 58 holes drilled between April and November 2017. The 2017 program aimed to confirm historic resources established by Gécamines in the Southern Zinc zinc-copper mineralized body, and to further confirm and expand copper dominant resources in the Série Recurrent and Nord Riche zones. These areas were not previously tested by Ivanhoe in the 2015 program.

28 holes were directed into the Southern Zinc totaling 5,720 m. Intersections were targeted between the 1,190 and 1,400 m levels at approximate 50 m centres. Below this, four holes were targeted to explore deeper extensions to this mineralized zone down to the 1,500 m level. 14 holes totaling 1,289 m were completed to further pursue high grade copper mineralization in the Série Recurrent identified in 2014 and 2015. Five additional holes totaling 857 m gave further definition to the structurally complex Nord Riche and two holes targeted the Fault Zone mineralized zone.

Metallurgical sampling of the Big Zinc and Fault Zone for comminution test work required three holes, of which two were completed, totaling 591 m.

Sampling, Analysis and Data Verification

Ivanhoe has primarily drilled NQ-TW (51mm) core size. Sampling was on 1m intervals up until hole KPU051, the nominal sample length was adjusted to 2m and subsequently been on 2m intervals for all zones with allowance for reduced sample lengths to honor mineralization styles and lithological contacts.

Sample preparation was completed by staff from KICO and its affiliated companies at its own internal containerized laboratories at Kolwezi and Kamoa-Kakula. Between June 1 and December 31, 2014, samples were prepared at the Kolwezi sample preparation laboratory by staff from the company's exploration division. After January 1, 2015, samples were prepared at Kamoa-Kakula by staff from that project. Representative subsamples were air freighted to the Bureau Veritas laboratory in Perth, Australia for analysis. Ivanhoe's QA/QC program has been set up in consultation with MSA Group (Pty.) Ltd., of Johannesburg.

Security of Samples

Ivanhoe maintains a comprehensive chain of custody program for its drill core samples from Kipushi. All diamond-drill core samples are processed at either the Company's Kolwezi facility, or at the Kamoa-Kakula Project facility. Core samples are delivered from Kipushi to the sample preparation facility by company vehicle. 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.

Mineral Resource Estimation

The Mineral Resource was prepared by MSA Group (Pty.) Ltd., of Johannesburg, South Africa, and the estimate was based on the results of 84 drill holes completed at Kipushi by the Company and an additional 107 historical holes drilled by Gécamines. Mineral Resource estimates were completed below the -1,150-metre-level on the Big Zinc Zone, Southern Zinc Zone, Fault Zone and Série Récurrente Zone. The Mineral Resources were categorized either as zinc-rich resources or copper-rich resources, depending on the most abundant metal. The Big Zinc and Southern Zinc zones have been tabulated using zinc cut-offs and the Fault Zone, the Fault Zone Splay and Série Récurrente Zone have been tabulated using copper cut-offs.

For the zinc-rich zones, the Mineral Resource is reported at a base-case cut-off grade of 7.0% zinc and the copper-rich zones at a base-case cut-off grade of 1.5% copper.

Kipushi Zinc-Rich Mineral Resource at 7% Zn Cut-Off Grade, 23 January 2016

Zone	Category	Tonnes (Millions)	Zn %	Cu %	Pb %	Ag g/t	Co ppm	Ge g/t
Big Zinc	Measured	3.59	38.39	0.67	0.36	18	17	54
	Indicated	6.60	32.99	0.63	1.29	20	14	50
	Inferred	0.98	36.96	0.79	0.14	7	16	62
Southern Zinc Zone	Indicated	0.00	-	-	-	-	-	-
	Inferred	0.89	18.70	1.61	1.70	13	15	43
Total	**Measured**	**3.59**	**38.39**	**0.67**	**0.36**	**18**	**17**	**54**
	Indicated	**6.60**	**32.99**	**0.63**	**1.29**	**20**	**14**	**50**
	Measured & Indicated	**10.18**	**34.89**	**0.65**	**0.96**	**19**	**15**	**51**
	Inferred	**1.87**	**28.24**	**1.18**	**0.88**	**10**	**15**	**53**

Contained Metal Quantities

Zone	Category	Tonnes (Millions)	Zn Pounds (Millions)	Cu Pounds (Millions)	Pb Pounds (Millions)	Ag Ounces (Millions)	Co Pounds (Millions)	Ge Ounces (Millions)
Big Zinc	Measured	3.59	3035.8	53.1	28.7	2.08	0.13	6.18
	Indicated	6.60	4797.4	91.9	187.7	4.15	0.20	10.54
	Inferred	0.98	797.2	17.1	3.0	0.23	0.03	1.96
Southern Zinc Zone	Indicated	0.00	0.0	0.0	0.0	0.00	0.00	0.00
	Inferred	0.89	368.6	31.8	33.5	0.38	0.03	1.23
Total	**Measured**	**3.59**	**3035.8**	**53.1**	**28.7**	**2.08**	**0.13**	**6.18**
	Indicated	**6.60**	**4797.4**	**91.9**	**187.7**	**4.15**	**0.20**	**10.54**
	Measured & Indicated	**10.18**	**7833.3**	**144.9**	**216.4**	**6.22**	**0.33**	**16.71**
	Inferred	**1.87**	**1168.7**	**49.6**	**36.8**	**0.61**	**0.06**	**3.21**

Notes:

1. All tabulated data has been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Mineral Reserves have no demonstrated economic viability.
3. The Mineral Resource is reported as the total in-situ Mineral Resource.
4. Metal quantities are reported in multiples of Troy Ounces or Avoirdupois Pounds.
5. The cut-off grade calculation was based on the following assumptions: zinc price of 1.02 USD/lb, mining cost of 50 USD/tonne, processing cost of 10 USD/tonne, G&A and holding cost of 10 USD/tonne, transport of 55% Zn concentrate at 375 USD/tonne, 90% zinc recovery and 85% payable zinc.

Kipushi Copper-Rich Mineral Resource at 1.5% Cu Cut-Off Grade, 23 January 2016

Zone	Category	Tonnes (Millions)	Cu %	Zn %	Pb %	Ag g/t	Co ppm	Ge g/t
Fault Zone	Measured	0.14	2.78	1.25	0.05	19	107	20
	Indicated	1.01	4.17	2.64	0.09	23	216	20
	Inferred	0.94	2.94	5.81	0.18	22	112	26
Série Récurrente	Indicated	0.48	4.01	3.82	0.02	21	56	6
	Inferred	0.34	2.57	1.02	0.06	8	29	1
Fault Zone Splay	Inferred	0.35	4.99	15.81	0.005	20	127	81
Total	**Measured**	**0.14**	**2.78**	**1.25**	**0.05**	**19**	**107**	**20**
	Indicated	**1.49**	**4.12**	**3.02**	**0.07**	**22**	**165**	**15**
	Measured & Indicated	**1.63**	**4.01**	**2.87**	**0.06**	**22**	**160**	**16**
	Inferred	**1.64**	**3.30**	**6.97**	**0.12**	**19**	**98**	**33**

Contained Metal Quantities

Zone	Category	Tonnes (Millions)	Cu Pounds (Millions)	Zn Pounds (Millions)	Pb Pounds (Millions)	Ag Ounces (Millions)	Co Pounds (Millions)	Ge Ounces (Millions)
Fault Zone	Measured	0.14	8.5	3.8	0.2	0.09	0.03	0.09
	Indicated	1.01	93.2	59.1	1.9	0.75	0.48	0.64
	Inferred	0.94	61.1	120.9	3.8	0.68	0.23	0.79
Série Récurrente	Indicated	0.48	42.4	40.5	0.2	0.32	0.06	0.09
	Inferred	0.34	19.4	7.7	0.4	0.09	0.02	0.01
Fault Zone Splay	Inferred	0.35	38.9	123.3	0.0	0.23	0.10	0.92
Total	**Measured**	**0.14**	**8.5**	**3.8**	**0.2**	**0.09**	**0.03**	**0.09**
	Indicated	**1.49**	**135.7**	**99.6**	**2.1**	**1.08**	**0.54**	**0.73**
	Measured & Indicated	**1.63**	**144.1**	**103.4**	**2.3**	**1.16**	**0.58**	**0.82**
	Inferred	**1.64**	**119.4**	**251.8**	**4.3**	**1.00**	**0.35**	**1.73**

Notes:

1. All tabulated data has been rounded and as a result minor computational errors may occur.
2. Mineral Resources which are not Mineral Reserves have no demonstrated economic viability.
3. The Mineral Resource is reported as the total in-situ Mineral Resource.
4. Metal quantities are reported in multiples of Troy Ounces or Avoirdupois Pounds.
5. The cut-off grade calculation was based on the following assumptions: copper price of 2.97 USD/lb, mining cost of 50 USD/tonne, processing cost of 10 USD/tonne, G&A and holding cost of 10 USD/tonne, 90% copper recovery and 96% payable copper.

2017 Pre-feasibility Study (PFS)

In December 2017, Ivanhoe issued the results of the Kipushi PFS which reflects the planned redevelopment of the Company's historic, high-grade, Kipushi zinc-copper mine. The Kipushi PFS plan covers the redevelopment of Kipushi as an underground mine, producing an average of 381,000 dry tonnes of zinc concentrate annually over an 11-year mine life.

The Kipushi PFS envisions a two-year redevelopment period.

Assuming a long term zinc price of $1.10/lb, the economic analysis returns a net present value at a real 8% discount rate of $683 million (after tax). The after tax internal rate of return is 35% and provides a payback period of 2.2 years. The life-of-mine average total cash cost is $0.48 per pound of zinc. Economics improve to a net present value of $1.2 billion (after tax, at an 8% discount rate) when a long term zinc price of $1.40/lb is assumed.

The Kipushi Project returns are set out below at long-term copper prices of $1.00/lb and $1.40/lb.

	Long Term Cu Price	
	$1.00/lb	**$1.40/lb**
Net Present Value (8% discount rate, $ millions)	683	1,199
Internal Rate of Return (%)	35.3%	50.9%

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

	Total Life of Mine	**Life of Mine Average**
Plant Feed Mined ('000 t)	8,581	780
Zinc Feed Grade (%)		32.14%
Zinc Recovery (%)		89.61%
Zinc Concentrate Produced ('000 t)	4,196	381
Contained Zinc in Concentrate ('000 t)	2,472	225
	$/lb Payable Zinc	
Total Cash Costs		0.48

Mining Operations

Mining zones included in the current Kipushi Mine plans occur at depths ranging from approximately 1,207 metres reduced level ("**mRL**") and 1,590 mRL with 0 mRL being the surface. Access to the mine will be via existing multiple vertical shafts and an internal decline. Mining will be performed using highly productive mechanized methods and cemented rock fill ("**CRF**") backfill will be utilized to fill open stopes. Depending on required composition and available material, excess waste rock and tailings from the dense media separation ("**DMS**") circuit will be used in the CRF mix as required.

Mining is planned to be a combination of longitudinal sub-level long-hole open stoping ("**SLOS**") and pillar retreat methods. The Big Zinc Zone mining method is expected to be longitudinal SLOS with mined stopes backfilled with CRF after stoping. The sill pillars are expected to be mined using the pillar retreat mining method once the adjacent stopes are backfilled.

The Big Zinc Zone is expected to be accessed via the existing decline and without significant new development. The zinc stoping is expected to be carried out between 1,207 mRL and 1,590 mRL, and the uppermost stoping level on the Big Zinc Zone is planned to be the 1,245 mRL. As the existing

decline is already below the first planned stoping level, there is potential to develop the first zinc stopes early in the mining schedule which could achieve a rapid ramp up of mine production. The main access levels are planned to be at 60 m vertical intervals with sublevels at 30 m intervals. The stope is planned to be drilled via a single parallel drive in each stope. The sill pillar height is planned to be 15 m. Stopes are planned to be mined 60 m along strike and then filled with CRF. Remote capable loaders are expected to be used for loading the broken rock beyond the stope brow.

In January 2018, KICO signed a memorandum of understanding with Byrnecut Offshore Proprietary Limited (Byrnecut), of Perth, Australia. The memorandum of understanding relates to the potential engagement of Byrnecut to provide underground mining services at Kipushi, including cost estimation, contractor management, operational readiness and operational services.

Kipushi 2017 PFS Mineral Reserves

The Kipushi 2017 PFS Mineral Reserve has been estimated by Qualified Person Bernie Peters, Technical Director – Mining, OreWin Pty. Ltd., using the 2014 CIM Definition Standards. The Mineral Reserve is based on the January 2016 Mineral Resource. The effective date of the Mineral Reserve statement is December 12, 2017.

Category	Tonnage (Mt)	Zinc (%)	Zinc (Contained kt)
Proven Mineral Reserve	3.10	35.41	1,098
Probable Mineral Reserve	5.48	30.29	1,660
Total Mineral Reserve	**8.58**	**32.14**	**2,758**

Notes:
1. Effective date of the Mineral Reserves is 12 December 2017.
2. Net Smelter Return (NSR) is used to define the Mineral Reserve cut-offs, therefore cut-off is denominated in US$/t. By definition the cut-off is the point at which the costs are equal to the NSR. An elevated cut-off grade of US$135/t NSR (14.03% Zn) was used to define the mining shapes. The marginal cut-off grade has been calculated to be US$51/t NSR (3.43% Zn).
3. Mineral Reserves are based on a zinc price of US$1.01/b Zn and a treatment charge of US$200/t concentrate.
4. Economic analysis to demonstrate the Kipushi 2017 PFS Mineral Reserve used a zinc price of US$1.10/lb Zn and a treatment charge of US$170/t concentrate.
5. Only Measured Mineral Resources were used to report Proven Mineral Reserves and only Indicated Mineral Resources were used to report Probable Mineral Reserves.
6. Mineral Reserves reported above were not additive to the Mineral Resources and are quoted on a 100% project basis.
7. Totals may not match due to rounding.

Mineral Processing and Metallurgical Testwork

Metallurgical test work programs were completed on drill core samples of known Kipushi mineralization between 2013 and 2017 for the various project redevelopment study phases. These investigations were focused on metallurgical characterization and flowsheet development for the processing of material from the Big Zinc Zone.

During the first half of 2013, a preliminary metallurgical test work campaign on drill core from the Big Zinc Zone was carried out at Mintek laboratories in Johannesburg, South Africa. Although preliminary in nature, comminution test work concluded that the material was soft and had a low abrasive index. The material was found to be easily upgradable to a saleable quality concentrate grading 56% zinc at high recovery of 87% using milling and differential flotation circuit. Detailed analysis of the final concentrate indicated that it was low in impurities.

In 2015, a further metallurgical testwork campaign on drill core from the Big Zinc Zone was carried out at Mintek and the results were used as a basis of design for the Kipushi PEA. The drill core for the composite was selected to represent all mineralization types in the Big Zinc Zone and the composite

sample head analysis was 40% zinc. DMS washability profiles were evaluated in the laboratory at three feed crush sizes (–20 mm, –12 mm, and –6 mm) using a combination of heavy liquid separation ("**HLS**") and shaking tables. Fine material (–1 mm), mainly generated during crushing, was screened off ahead of HLS separation and tested on bench scale shaking tables (shaking tables provide a laboratory scale simulation of a commercial spiral plant). The –20 mm crush size achieved overall optimum results with a zinc recovery of 95.4% at a saleable concentrate grade of 55.5% zinc.

In 2016, an extensive metallurgical testwork campaign was conducted using approximately 900 kg of half core from eight drill holes intercepting the Big Zinc Zone. The testwork program scope covered variability, flowsheet development and optimization ahead of the Kipushi PFS. About ten composites were constituted for variability tests using the physical separation circuit developed during the Kipushi PEA. A PFS development composite grading 32% zinc was also constituted for flowsheet development and optimization tests. Mineralogical investigations conducted on the PFS development composite head sample confirmed that the Big Zinc is predominately sphalerite (49%), with chalcopyrite (1%) and galena (1%) present as minor constituents, with the gangue minerals in order of abundance: dolomite (31%); pyrite (14%); quartz (2%).

Gravity separation tests (HLS and shaking table) were conducted on variability samples and the PFS composite sample, as per the Kipushi PEA flowsheet. Gravity separation tests achieved overall high recovery of >95% for all composites tested; however, concentrate zinc grade was variable between 30% and 53% zinc depending on the base metal sulphide content of various feed samples. The results showed that although the DMS plant was highly effective in rejecting dolomite, with limited loss in zinc, other heavy sulphide minerals associated with copper, lead and iron reported to the concentrate and consequently diluted the concentrate zinc grade below saleable concentrate specification.

Furthermore, a fine rather than coarse concentrate is typically required by custom smelters. Further test work was undertaken that incorporated a milling and flotation circuit, specifically to ensure a saleable zinc concentrate specification is produced (100% passing <500 μm and >53% Zn). A number of flotation tests were conducted at varying conditions and the optimum circuit configuration was a combination of a DMS and differential flotation circuit. In the differential float, a copper-lead concentrate is first produced, followed by zinc flotation and pyrite depression in the subsequent flotation stage. The zinc rougher tails and the copper-lead concentrate are discarded as final tails.

The process plant as currently proposed has a nameplate capacity of 800 ktpa, a nominal design life-of-mine head grade of 32.1% Zn, a production life of 11 years and an average zinc recovery of 89.6%. The process plant consists of two stage crushing and screening, dense media separation, ball mill grinding, and differential flotation circuit, thickening and filtration, producing a saleable zinc concentrate.

Life-of-mine average annual planned zinc concentrate production is anticipated to be 381 ktpa, with a concentrate grade of 59% Zn. Total zinc production is anticipated to be 8.6 Mt ore at 32.1% Zn to produce 2,472 kt of zinc metal in concentrate.

Existing and Planned Infrastructure

KICO has a significant amount of underground infrastructure at the Kipushi Project, including a series of vertical mine shafts, with associated head frames, to various depths, as well as underground mine excavations and other infrastructure, including ventilation and a series of pumps to manage the influx of water into mine, which have significant redundant capacity. The newest shaft, P5 Shaft, which is planned to be used as the main production shaft, is eight metres in diameter and 1,240 metres deep and has a maximum hoisting capacity of 1.8 million tonnes a year and provides the primary access to the lower levels of the mine. Following the dewatering of the mine, which was completed at the end of

2013, the underground infrastructure has undergone significant refurbishment and in some cases, new infrastructure has been installed. Refurbishment of underground infrastructure is expected to be completed in 2018.

On surface, the property hosts surface mining and processing infrastructure, a mineral processing/beneficiation plant, offices, workshops, stores, and connection to the national power grid. Some of the infrastructure has already undergone refurbishment. All of the surface infrastructure is owned by Gécamines. KICO has entered into an agreement to use the surface rights on the Kipushi Project to the extent required for its operations. It is planned to establish a new processing plant with its associated supporting infrastructure, including a rail loading terminal.

KICO is connected to the national power grid, and electricity is supplied by SNEL from two transmission lines from Lubumbashi. Pylons are in place for a third transmission line. An abundant supply of process water from the underground dewatering operations is expected to provide adequate water for processing and mining operations.

High-grade zinc concentrate from Kipushi is planned to be transported for shipping to export markets by rail. On October 30, 2017, Ivanhoe Mines and the DRC's state-owned railway company, Société Nationale des Chemins de Fer du Congo (SNCC), signed a memorandum of understanding to rebuild 34 kilometres of track to connect the Kipushi Mine with the DRC national railway at Munama, south of the mining capital of Lubumbashi.

Under the terms of the memorandum of understanding, Ivanhoe has appointed R&H Rail (Pty) Ltd. to conduct a front-end engineering design study to assess the scope and cost of rebuilding the spur line from the Kipushi Mine to the main Lubumbashi-Sakania railway at Munama. The study has begun and construction on the Kipushi-Munama spur line could start in late 2018. Ivanhoe will finance the estimated US$32 million (plus contingency) capital cost for the rebuilding, which is included within the overall Kipushi 2017 PFS capital cost.

The proposed export route is to utilize the SNCC network from Kipushi to Ndola, connecting to the North-South Rail Corridor from Ndola to Durban. The North-South Rail Corridor to Durban via Zimbabwe is fully operational and has significant excess capacity.

Capital Costs and Operating Costs

KICO estimates that capital costs for initial development of mining operations, concentrator, and other ancillary on-site facilities, including contingency, will amount to approximately $337 million.

Capital Investment Summary

Item	Pre-Production ($M)	Production ($M)	Total ($M)
Mining			
Underground Mine Refurbishment	17	–	17
Underground Mining	57	128	185
Capitalized Operating Costs	37	–	37
Subtotal	112	128	239
Process and Infrastructure			
Process and Infrastructure	78	7	84
Rail	32	–	32
Capitalized Operating Costs	7	–	7
Subtotal	116	7	123
Closure			
Closure	–	20	20
Subtotal	–	20	20
Indirects			
EPCM	12	–	12
Capitalized G&A	11	–	11
Subtotal	23	–	23
Others			
Owners Cost	49	24	73
Subtotal	**49**	**24**	**73**
Capital Cost Before Contingency	**300**	**178**	**478**
Contingency	37	–	37
Capital Cost After Contingency	**337**	**178**	**515**

Sustaining capital expenditure, including underground mining development, is estimated to amount to an additional $178 million spread over the 11-year mine life.

Operating costs include estimates for underground mining, processing, general and administrative expenses, transport, refining and other realization costs. The total cash cost is estimated to be $0.48 per pound of zinc on average over the life of the mine.

Sensitivity Analysis

The Kipushi Project redevelopment plan returns a net present value of $683 million (after tax), assuming a long term zinc price of $1.10/lb at an 8% discount rate. The after tax internal rate of return is 35.3%

and the payback period is 2.2 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 ($ millions)	Undiscounted	1,944	1,435
	5.0%	1.239	900
	8.0%	953	683
	10.0%	743	517
IRR		41.7%	35.3%
Project Payback (years)		1.9	2.2

Cash flow sensitivity to changes in zinc price and zinc treatment charge is shown in the table below, for zinc prices from $0.90/lb to $2.00/lb, and treatment charges from $50/t to $250/t.

Zinc Treatment Charge (US$/t)	**Zinc Price (US$/lb)**							
	0.90	**1.00**	**1.10**	**1.20**	**1.40**	**1.50**	**1.70**	**2.00**
50	524	698	870	1,043	1,385	1,557	1,899	2,412
	29.8%	35.8%	41.3%	46.5%	56.0%	60.5%	69.0%	80.5%
100	444	619	792	965	1,308	1,479	1,822	2,334
	26.9%	33.2%	38.8%	44.2%	53.9%	58.4%	67.2%	78.8%
150	364	540	714	886	1,230	1,401	1,744	2,257
	23.8%	30.4%	36.3%	41.8%	51.7%	56.4%	65.2%	77.1%
170	331	508	**683**	855	1,199	1,370	1,713	2,226
	22.5%	29.2%	**35.3%**	40.8%	50.9%	55.5%	64.4%	76.4%
200	282	461	635	808	1,152	1,324	1,666	2,179
	20.5%	27.4%	33.7%	39.3%	49.6%	54.3%	63.2%	75.4%
250	200	380	556	730	1,074	1,246	1,589	2,102
	17.0%	24.4%	30.9%	36.8%	47.3%	52.1%	61.2%	73.6%

Markets and Contracts

To date KICO has no contracts or marketing agreements in place for the sale of zinc concentrate. Preliminary discussions are actively underway with a number of potential off-takers of zinc concentrate.

Environmental, Social and Community

The Company conducted an environmental, social and health impact assessment (ESHIA) baseline study that analyzed environmental, biological, social and cultural heritage issues. KICO has also undertaken several studies to complement the Golder ESHIA.

The Company has undertaken a number of high-profile community development and cultural activities, including operation, electricity supply, maintenance and security of the potable water pump station and emergency repairs on as-needed basis to the potable water mains reticulation to the municipality.

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. Companies that are the holders of mining rights are subject to corporate tax at 30%.

From January 2014, the minimum amount of tax payable by mining companies in a year is 1% of the calculated revenue for that specific year ("**Minimum Tax Amount**"). Mining companies in a loss position during a specific year will still be liable for the Minimum Tax Amount. In addition, mining companies whose tax liability is less than the Minimum Tax Amount in a specific year will still be liable for the Minimum Tax Amount.

If no income is earned during the exploration and development period, exploration and development expenditure incurred may only be deducted for tax purposes once production begins. The aggregate exploration expenditure may be claimed as an equal deduction over a two year period once production commences. To the extent that the deduction creates an assessed loss ("**Exploration/Development Loss**"), the loss should be ring-fenced and may be utilized in subsequent years without any time limitation. This DRC law was amended in January 2016 to limit the utilization of Exploration/Development Losses to 60% of the net income (calculated by deducting all acceptable expenditures and depreciation of fixed assets from gross income derived during a year of assessment) in subsequent years.

Companies in an assessed loss position arising from operational activities may carry forward these assessed losses for five years upon receipt of prior approval from the tax authorities. The utilization of operating assessed losses is also limited to 60% of the net income in subsequent years. The 60% limitation applies to the cumulative loss of a company (i.e. operational losses and Exploration/Development losses).

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 four 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

While Haut-Katanga Province has imposed a provincial tax of $100 per tonne on copper and cobalt concentrate products destined for export, the Kipushi Project is not expected to be subject to a zinc concentrate export tax.

Funding / Thin Capitalization

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 Haut-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.

In addition, the state-owned mining company Gécamines receives a royalty of 2.5% of net turnover.

Project Development

Following the completion of the Kipushi 2017 PFS, a Feasibility Study is underway, targeted for completion in the second half of 2018. This involves detailed design and engineering for the remaining underground infrastructure, processing plant, including further metallurgical test work, and surface facilities.

Underground upgrading work is nearing completion on the crusher and the rock load-out facilities at the bottom of P5 Shaft and the main haulage way on the 1,150-metre level, between the Big Zinc access decline and P5 Shaft. Underground and surface early works have commenced to prepare for mine development.

A front-end engineering design study is well underway to assess the scope and cost of rebuilding the spur line from the Kipushi Mine to the main railway at Munama.

OTHER PROJECTS

DRC Regional Exploration

In addition to the permits covering the Kamoa-Kakula Project and the Kipushi Project, Ivanhoe holds exploration permits in Lualaba and Haut-Katanga provinces, around the perimeter of the historical limits of the Central African Copperbelt. 50 permits were originally granted in 2003 and 2005 covering an area of almost 20,000 km^2. Under 2002 DRC Mining Code, exploration permits are renewable for two five-year periods, with a 50% reduction required at each renewal. Outside of the permits converted into the Kamoa-Kakula mining licence, all of the permits are in their final five-year period following which they will expire.

Ivanhoe has a joint-venture with Nzuri Copper Ltd (formerly Regal Resources) on five licences covering 343 km^2 in the Fold and Thrust Belt. Nzuri carried out an extensive reconnaissance exploration program in 2017 including 9,500 line km of detailed airborne magnetics, 2,791 metres of trenching, 4,364 metres of RC drilling and 2,249 metres of diamond drilling.

During 2017, after a hiatus in exploration activities in 2015 and 2016 Ivanhoe restarted exploration on its wholly owned permits west of Kamoa-Kakula. The licences, PR704, PR706, PR708, PR711, PR712, PR713 and PR714 are collectively referred to as the Western Foreland Licences and are considered highly prospective for Kamoa-Kakula type targets at the base of the Grand Conglomerate (Lower Nguba). Activities for the year included building a new exploration base camp in the western portion of the Kamoa-Kakula license, purchasing new field equipment and vehicles and putting in all season access for exploration. In the second half of 2017 Ivanhoe completed an airborne gravity survey over the greater Kamoa-Kakula area and also started work on a number of seismic traverses. Exploration drilling also commenced late in 2017 and a total of 9,500m of diamond drilling had been completed by year-end.

No exploration activity occurred on Ivanhoe’s wholly owned permits outside of the Fold and Thrust belt JV licenses or the Western Foreland Licenses. Ivanhoe has budgeted to expand its DRC exploration activity in 2018.

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 earlier stage of development. Investments in mineral exploration and development issuers, such as the Company, involve a significant degree of risk despite the Company having undertaken various economic studies, including pre-feasibility or feasibility studies at some or all of its Projects. 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 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. All of Ivanhoe's Projects have significant third party joint venture partners, and Ivanhoe relies on such partners to varying degrees in order to successfully execute its exploration and development plans at such Projects. 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 economic feasibility of the Kamoa-Kakula, Platreef and Kipushi projects cannot be assured.

The Company has completed a Pre-feasibility or Feasibility Study on each of its Projects that permits it to declare Mineral Reserves at such Projects. While such studies demonstrate the economic viability of the Projects as of the effective date of such report, no assurance can be given that the project will ultimately achieve the economic results projected by the study. In particular, the Pre-feasibility or Feasibility Studies are based on certain assumptions and factors that are subject to change. Many of these factors are beyond the control of the Company. These include changes in commodity prices (including for platinum, palladium, gold, rhodium, nickel, copper and zinc), the inability to secured the initial capital required at each project to bring it into production, which exceeds $1 billion at each of the Kamoa-Kakula and Platreef projects, the inability to source and obtain adequate water and electricity, changes in currency (including between the South African Rand and US dollar in particular), unexpected changes in the price of consumables and construction materials (including oil, diesel, steel, and concrete), changes in tax rates or tax regimes in South Africa and the DRC, the possibility that war, civil strife, sabotage, terrorism or civil disobedience (lawful or unlawful) impact or delay the development plans for the Projects, and that laws, rules and regulations change in a material manner that has the result of adversely affecting the costs of the project (both capital and operating). The results of the Pre-feasibility or Feasibility Studies speak only as of its effective dates, and a change in any of these factors (or a combination of them), could have a material adverse effect on the economic feasibility of the Projects and in turn, on the Company'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, or if successfully developed, may not remain economically viable for their mine life owing to any of the foregoing reasons. Notwithstanding demonstrated feasibility, the Company's ability to complete development work and commence and/or sustain 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 laws or regulations, the availability and productivity of skilled labour, the regulation of the mining industry by various levels of governmental agencies, political factors, and the compliance of joint venture partners with various contractual obligations and commitments. 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 further 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 Kamoa-Kakula 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 Kamoa-Kakula 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 Kamoa-Kakula 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. 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-Kakula 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-Kakula 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 mining 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 make annual payments of the associated surface rights fees, failing which a holder may lose its mining rights.

At the Platreef Project, even though the Platreef Mining Right under the laws of South Africa has been granted, numerous conditions apply to keep the licence in good standing, failing which a holder may lose its 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.

Development of the Platreef Project may require the relocation of existing communities

Two large urban communities and additional smaller communities inhabit portions of the Platreef Project. Currently planned development of the Platreef Project may require a relocation of some or all of such communities, at the Company's expense, to advance current development plans. Relocation would require a negotiation with the relevant community, and there is no guarantee that any such negotiations will be successful or that it will be possible to conclude on terms acceptable to the Company, and this may disrupt prospective development plans 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, 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 and finite 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. The Company has also contracted with its joint venture partner at the Kamoa-Kakula Project to incentivize it to obtain project financing for the Kamoa-Kakula Project. There is no assurance, however, that additional funding will be available to the Company for further exploration and development of the Projects or that its joint venture partner will be able to obtain project financing, 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.

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. Due to recent legislative amendments, claims under the Restitution of Land Rights Act have to be lodged by June 30, 2019. The possibility exists of further land claims being made against Rietfontein, Turfspruit and Macalacaskop. Land claims lodged after July 1, 2014, are to be recorded in a National Land Restitution Register, which will be open to the public subject to the South African Promotion of Access to Information Act. 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.

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.

The failure to maintain required equity participation by HDSAs in the Company's South African prospecting and mining operations could adversely affect the Company's ability to maintain its prospecting and mining rights.

In May 2004, a new legal regime was introduced into South Africa to regulate the mining sector. The principal statute of this new regime, the Mineral and Petroleum Resources Development Act, 2002 ("**MPRD Act"**), contained ambitious and wide-ranging objectives, including sustainable development and the promotion of equitable access to South Africa's mineral wealth by the inclusion of HDSAs in the South African mining industry.

The MPRD Act provides for the introduction and inclusion of HDSA's into the South African mining industry by way of applicants for mineral rights having to demonstrate, among other requirements, that they have given effect to this objective. Practically, satisfaction of this requirement is measured with reference to the Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry and its associated scorecard ("**Mining Charter**"), being a legislative guideline that was published by the Minister of Mineral Resources in terms of the MPRD Act. The Mining Charter sets out the major areas of measurement, such as ownership, housing and living conditions, procurement and enterprise development, employment equity, human resource development, mine community development, sustainable development and growth and beneficiation of minerals. Each of these items is given a weighting and applicants and holders of mineral rights are measured with respect to their compliance with these various items. The Mining Charter is currently being reviewed by the DMR and is also the subject of several court applications in relation to its validity and interpretation, the results of which may have an impact on the Company and its HDSA-related arrangements.

In relation to the ownership element of the Mining Charter, applicants and holders of mineral rights are required to demonstrate that HDSAs have and maintain an ownership interest of at least 26% in the applicable mineral project. Various contractual arrangements and mechanisms customary for such relationships have accordingly been put in place between the Company, its co-investors and its HDSA partners (see *Material Contracts – Consolidated Investors' Agreement and BEE Transaction*) to ensure that HDSAs have and maintain an ownership interest of at least 26% in the Platreef Project. Notwithstanding such measures having been put in place, should HDSAs cease to hold the requisite ownership participation in the Company's prospecting and mining operations this would adversely affect the Company's ability to maintain its prospecting and mining rights which, if suspended or cancelled as a result, would 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 Kamoa-Kakula 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. In addition, presidential elections were due to be held in 2017 and have been delayed until 2018, and such elections and their delay may result in unrest generally throughout the country. 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. In addition, the foregoing risks may result in legislation and regulations being implemented which are unconstitutional or of an extra-legislative nature and for which limited legal recourse may be available in DRC.

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, as well as unknown or unanticipated changes in legislative 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.

The impact of the 2018 Mining Code on the Company and its projects in DRC is not fully known and may be materially adverse.

On March 9, 2018, the DRC President signed into effect the 2018 DRC Mining Code that revises the country's 2002 mining code. The 2018 DRC Mining Code also makes substantial revisions to a number of other provisions, including stability, VAT, royalty rates, income taxes, local content and other matters. In addition, mining regulations are also required to be negotiated, drafted and promulgated under the 2018 DRC Mining Code. The full effect and economic impact of the 2018 DRC Mining Code requires detailed analysis of its terms, as well as the forthcoming mining regulations. While the 2018 DRC Mining Code will have an adverse impact on the Company and its projects located in DRC, the precise nature and quantum of those changes cannot be determined with certainty currently, and may be more or less adverse to the Company's projects in DRC and its financial condition, than currently anticipated or planned in particular because the terms of the mining regulations are not currently known.

In addition, while the 2018 DRC Mining Code has been implemented, the DRC Government may, in the future, amend, modify, supplement or repeal the 2018 DRC Mining Code and the mining regulations. Such changes may be with or without notice to the industry, and may be materially adverse and/or materially increase the cost of exploring, developing and/or operating a mine in DRC. Any such future changes could be materially adverse to the Company's financial condition, results of operations, business or prospects, and those of its projects in DRC.

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 or adverse 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, stability and royalty regimes, delays in obtaining or the inability to obtain, or the cancelation 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.

As a result, Ivanhoe is subject to various increased economic, political, legal, 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 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-Kakula 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, as well as the availability of capital to develop the Projects. 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 cyclicality 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 Mineral Reserves 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, may be the result of a decision by one of the Company's joint venture partners, 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 and/or mining operations discontinued and never recommenced. 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 and Reserves are estimates only and are subject to change due to a variety of factors.

There is no certainty that the Mineral Resources, or Mineral Reserves, attributable to any Project or 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 and Reserve estimates included in this AIF are well established and represent management's best estimates, by their nature Mineral Resource and Reserve 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 future development of the Kipushi Project.

The Kipushi Project was the site of an operating mine for several decades, followed by more than 20 years during which it was on a limited care and maintenance program. Although significant rehabilitation work for underground and certain surface facilities has been undertaken, many of 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 regularly analyzed, into a nearby river. 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. Subsequently, KICO completed an environmental baseline study in 2015, and is currently in the process of updating the ESHIA in line with the Kipushi PFS. 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 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 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 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 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, the non-brokered private placement closed in October 2013, the public offering and concurrent private placement closed in June 2014, the option to acquire additional shares which was exercised in July 2014 and the announced private placement in March 2015 were, and any other future equity financing activities are expected to be, completed in Canadian dollars while a significant portion of the Company's 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 awareness 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 several peri-urban communities inhabit portions of the Platreef Project. Ivanhoe has entered into agreements with the lawful occupiers of the mining 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 conclusion of the long term lease agreement. 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. 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.

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

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 jurisdiction over the Company, its subsidiaries and/or any of its directors, officers, employees or other personnel, such as the *Corruption of Foreign Public Officials Act* (Canada), the *Foreign Corrupt Practices Act of 1997* (United States), the *Bribery Act* (United Kingdom), *Prevention and Combating of Corrupt Activities Act, 2004* (South Africa)**,** as each may be amended from time to time (collectively, the "**Acts**").

While the Acts are not identical, the Acts generally make it illegal for an employee or other person acting on the Company's behalf, in order to obtain or retain business, directly or indirectly, to offer or agree to give or offer loans, rewards, payments or benefits of any kind to foreign public officials or to any person for the benefit of public officials. Foreign public officials include persons holding legislative, administrative or judicial positions with a foreign state (including political divisions within a foreign state), persons who perform public duties or functions for a foreign state (such as persons employed by boards, commissions or government-owned or -controlled corporations), officials and agents of international organizations, foreign political parties and candidates for office.

The increasing number and severity of enforcement actions in recent years presents particular risks with respect to Ivanhoe's business activities, including the potential for severe legal penalties if any employee

or other person acting on the Company's behalf might offer, authorize, or make an illegal payment to a foreign public 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 state or state owned / controlled enterprises and will require permits, licences and approvals for its operations As a result, there is an increased risk of a breach of anti-corruption legislation given the nature of these ventures and the jurisdictions in which they are located.

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 Acts 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.

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 who are its joint venture partners. Failure of the Company's joint venture partners to meet their contractual obligations and commitments to the Company or an affiliate of 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 (other than the Kamoa-Kakula Project) and is responsible for the day-to-day operation and management of the Projects (other than the Kamoa-Kakula Project), certain members of the boards of directors of the holding companies or operating companies of the Projects are, or will be, nominated by joint venture partners. Certain decisions require, or will require, unanimous or super-majority 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; (vi) project finance; (vii) annual budgeting at the Kamoa-Kakula Project; (viii) cash calls at the Kamoa-Kakula Project; and (vix) overall long-term development and operational program at the Kamoa-Kakula Project. To the extent unanimous or super-majority consent cannot be obtained, there is a risk that the Company will not be able to affect these matters despite the Company's desire to do so.

In addition, the ownership and development of the Projects with joint venture parties 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 joint venture partners. 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 joint venture partners, 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 or Mineral Reserves 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, development 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 development 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 herein.

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 55% of the Company's work force is unionized. The Company has reached an agreement with the unions 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, malaria and tuberculosis.

HIV/AIDS, malaria, 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, malaria 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.

The Company is reliant on the continuous and uninterrupted operations of its information technology ("IT") systems.

Security of its IT systems are critical elements to the operations of the Company and its Projects. Protection against cyber security attacks, including cloud security and security of all of the Company's IT systems (and related electronically stored data), are undertaken by the Company. Any cyber security attacks and/or any failure in IT systems to prevent unauthorized access or availability to, the Company's IT systems could result in disruptions to Project operations, the inability of Company personnel to access such systems, legal liability, and could result in the loss of the business data, personal information or financial information. The Company stores all of its proprietary data on servers including, but not limited to, financial records, drilling databases, technical information, legal information, licences and human resource records. The Company utilizes standard and best practice protocols and procedures in protecting and backing up electronic records; however, there is no assurance that third parties will not illegally access these records which could have a material adverse effect on the Company. Any such attack or loss could adversely affect the reputation, operations or financial performance of the Company, and could result in unforeseen costs to defend against such attacks or remedy any losses.

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 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 29, 2018, 791,338,002 Class A Shares, nil 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. Although there are no Class B Shares currently outstanding, the Class A Shares and Class B Shares would 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

Although there are no Class B Shares currently outstanding, 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 would 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 contain coattail provisions in the event of a take-over bid (as defined in Multilateral Instrument 62-104 – *Take-Over Bids and Issuer Bids*) for Class A Shares.

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 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 29, 2018 was C$2.72. There are no Class B Shares currently outstanding and Class B Shares are prohibited from becoming listed on a stock exchange or stock market. On October 26, 2016, the Class A shares also began trading on the OTCQX under the symbol "IVPAF".

Trading Price and Volume of the Class A Shares

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 2017	4.36	2.59	78,829,584
February 2017	5.11	3.76	82,705,955
March 2017	4.85	3.71	105,411,298
April 2017	5.47	4.54	53,607,208
May 2017	4.88	3.73	48,082,030
June 2017	4.35	3.72	37,403,040
July 2017	5.05	4.01	26,802,682
August 2017	4.96	4.06	30,771,044
September 2017	4.75	3.93	28,716,361
October 2017	4.92	4.01	25,624,046
November 2017	5.01	4.26	23,591,234
December 2017	4.54	4.025	21,497,711
January 2018	4.32	3.42	30,114,711
February 2018	3.50	2.73	45,656,331
March 2018 (1-29)	3.37	2.51	39,932,448

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.

Date of Issue	Number and Type of Securities	Issue Price Per Securities	Aggregate Issue Price	Nature of Consideration
March 12, 2018	3,500,000 Options	Nil[14]	N/A	N/A
February 27, 2018	4,665 Class A Shares[3]	Nil	N/A	N/A
February 7, 2018	50,000 Class A Shares[1]	C$1.98	C$99,000	Cash
February 7, 2018	100,000 Class A Shares[1]	C$0.99	C$99,000	Cash
February 7, 2018	125,000 Class A Shares[1]	C$0.64	C$80,000	Cash
February 3, 2018	1,503,509 Restricted Share Units[2]	Nil	N/A	N/A
February 1, 2018	671,169 Restricted Share Units[3]	Nil	N/A	N/A
January 1, 2018	20,471 Deferred Share Units[4]	Nil	N/A	N/A
December 31, 2017	30,000 Deferred Share Units[5]	Nil	N/A	N/A
December 22, 2017	257,946 Class A Shares[6]	C$1.98	N/A	Cashless Exercise
December 21, 2017	25,000 Class A Shares[1]	C$1.98	C$49,500	Cash
December 21, 2017	62,500 Class A Shares[1]	C$0.99	C$61,875	Cash
December 18, 2017	100,000 Class A Shares[1]	C$0.64	C$64,000	Cash
December 18, 2017	5,000 Class A Shares[1]	C$0.99	C$4,950	Cash
December 15, 2017	2,400,678 Restricted Share Units[7]	Nil	N/A	N/A
December 15, 2017	120,000 Class A Shares[1]	C$0.99	C$118,800	Cash
December 14, 2017	62,500 Class A Shares[1]	C$0.99	C$61,875	Cash
October 13, 2017	7,500 Class A Shares[1]	C$1.98	C$14,850	Cash

Date of Issue	Number and Type of Securities	Issue Price Per Securities	Aggregate Issue Price	Nature of Consideration
October 12, 2017	38,851 Class A Shares[8]	C$0.99	N/A	Cashless Exercise
October 12, 2017	20,777 Class A Shares[9]	C$1.98	N/A	Cashless Exercise
October 2, 2017	30,000 Class A Shares[1]	C$2.48	C$74,400	Cash
September 19, 2017	36,600 Class A Shares[1]	C$1.45	C$53,070	Cash
September 18, 2017	88,400 Class A Shares[1]	C$1.45	C$128,180	Cash
September 18, 2017	136,600 Class A Shares[1]	C$1.74	C$237,684	Cash
September 1, 2017	10,100 Class A Shares[1]	C$0.64	C$6,464	Cash
August 31, 2017	54,900 Class A Shares[1]	C$0.64	C$35,136	Cash
August 31, 2017	75,000 Class A Shares[1]	C$0.99	C$74,250	Cash
August 28, 2017	5,000 Class A Shares[1]	C$1.98	C$9,900	Cash
August 24, 2017	75,000 Class A Shares[1]	C$1.98	C$148,500	Cash
August 24, 2017	125,000 Class A Shares[1]	C$0.99	C$123,750	Cash
August 24, 2017	100,000 Class A Shares[1]	C$0.99	C$99,000	Cash
August 22, 2017	30,000 Class A Shares[1]	C$1.98	C$59,400	Cash
August 16, 2017	89,000 Class A Shares[1]	C$0.99	C$88,110	Cash
August 11, 2017	17,173 Class A Shares[10]	$3.00	N/A	Cashless Exercise
July 11, 2017	12,500 Class A Shares[1]	C$0.64	C$8,000	Cash
May 30, 2017	100,000 Class A Shares[1]	C$0.64	C$64,000	Cash
May 30, 2017	100,000 Class A Shares[1]	C$0.99	C$99,000	Cash
April 19, 2017	550,193 Class A Shares[11]	$3.00	N/A	Cashless Exercise
April 13, 2017	150,000 Class A Shares[1]	C$0.99	C$148,500	Cash
April 13, 2017	150,000 Class A Shares[1]	C$1.98	C$297,000	Cash
April 12, 2017	37,500 Class A Shares[1]	C$0.99	C$37,125	Cash
April 12, 2017	50,000 Class A Shares[1]	C$4.98	C$249,000	Cash
April 1, 2017	29,687 Class A Shares[12]	Nil	N/A	N/A
March 31, 2017	2,500 Class A Shares[1]	C$0.99	C$2,475	Cash
March 30, 2017	35,000 Class A Shares[1]	C$0.99	C$34,650	Cash
March 23, 2017	97,065 Class A Shares[13]	$3.00	N/A	Cashless Exercise

Notes:

(1) Represents Class A Shares issued upon the exercise of Options.
(2) Represents RSU awards for nil consideration, which RSUs fully vest on March 1, 2021.
(3) Represents Class A Shares issued upon the vesting of RSUs.
(4) Represents DSU awards for nil consideration, which DSUs will settle on December 31, 2021.
(5) Represents Class A Shares issued upon the settlement of DSUs.
(6) 500,000 Options were exercised via a cashless exercise resulting in the issuance of a net 257,946 Class A Shares.
(7) Represents Class A Shares issued upon the vesting of RSUs.
(8) 50,000 Options were exercised via a cashless exercise resulting in the issuance of a net 38,851 Class A Shares.
(9) 37,500 Options were exercised via a cashless exercise resulting in the issuance of a net 20,777 Class A Shares.
(10) 100,000 Options were exercised via a cashless exercise resulting in the issuance of a net 17,173 Class A Shares.
(11) 2,500,000 Options were exercised via a cashless exercise resulting in the issuance of a net 550,193 Class A Shares.
(12) Represents RSU awards for nil consideration, which RSUs fully vest on April 1, 2020.
(13) 1,000,000 Options were exercised via a cashless exercise resulting in the issuance of a net 97,065 Class A Shares.
(14) Represents an issuance of Options for nil consideration, which Options have an exercise price of C$3.05 and an expiry date of March 12, 2023.

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, 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 or in accordance with the employment agreement of each.

Name and Country of Residence	Position with the Company	Principal Occupation for Past Five Years[1]	Number of Shares Owned Directly or Indirectly[1][2]
Directors			
Robert M. Friedland Singapore	Executive Chairman and Director since November 2000	Founder and Executive Chairman of Ivanhoe (November 2000 – present); Co-Chairman of Clean TeQ Holdings Limited (September 2016 – present); Co-Chairman of SK Global (March 2017 – present); Chairman (January 2018 – present), Chief Executive Officer (December 2015 – present) and Co-Chairman (December 2015 – December 2017) of High Power Exploration Inc.; Chairman of I-Pulse Inc. (April 2008 – 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 and Chief Executive Officer of Ivanhoe Capital Corporation (July 1988 – present); Founder and Executive Co-Chairman of Ivanhoe Energy Inc. (May 2008 – October 2014).	168,999,707 Class A Shares (21.36%)
Egizio Bianchini Ontario, Canada	Executive Vice Chairman and Director since March 2018[11]	Executive Vice Chairman of Ivanhoe (March 2018 – present); Vice Chairman and Co-Head of the Global Metals & Mining Group of BMO Capital Markets (July 1989 – March 2018)	Nil

Ian D. Cockerill Gauteng, South Africa	Director since May 2011[6] [7] [12]. Lead Independent Director since May 2012	Non-Executive Director of Endeavour Mining Corporation (September 2013 – present); Chairman of BlackRock World Mining Trust (May 2016 – present); Executive Chairman (July 2010 – February 2013) and Non-Executive Chairman (February 2013 – June 2017) of Petmin Limited; Non-Executive Director of Orica Limited (September 2010 – present); Non-Executive Director and Vice Chairman of African Minerals Limited (July 2013 – December 2014); Non-Executive Chairman of Hummingbird Resources Ltd. UK (October 2009 – November 2014)	76,700 Class A Shares (0.01%)
William B. Hayden New South Wales, Australia	Director since March 2007 and May 1998 — September 2002[3] [8]	President of GoviEx Uranium Inc. (June 2010 – August 2011)	476,666 Class A Shares (0.06%)
Oyvind Hushovd Norway	Director since September 2007[7] [9]	Director of Nyrstar B.V. (December 2009 – April 2016); Director of Cameco Corporation (December 2003 – May 2013); Director of Inmet Mining Corporation (May 2002 – March 2013)	1,000,000 Class A Shares (0.13%)
Livia Mahler British Columbia, Canada	Director since March 2015[3] [4] [10]	President and Chief Executive Officer, Computational Geoscience Inc. (December 2010 to present); Managing Partner and co-founder, Greenstone Venture Partners (February 2000 to December 2016)	Nil
Peter G. Meredith British Columbia, Canada	Director since May 1998[4] [8]	Chairman of Kaizen Discovery Inc. (December 2013 – June 2016); President and Chief Executive Officer, Global Mining Management Corporation (April 2006 – May 2013);	1,304,825 Class A Shares (0.16%)
Guy J. de Selliers England, United Kingdom	Director since May 2011[5] [11]	President of HCF International Advisers Ltd. (March 2003 – present)	520,000 Class A Shares (0.07%)
Executive Officers			
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	4,309,338 Class A Shares (0.54%)

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	137,876 Class A Shares (0.02%)
Mark Farren Gauteng, South Africa	Executive Vice President, Operations since June 2014	Executive Vice President, Operations of Ivanhoe (June 2014 – present); Managing Director and Chief Executive Officer of Tharisa Minerals (August 2010 – May 2014); Head of Mining of Anglo American Platinum Limited (January 2009 – July 2010)	67,708 Class A Shares (0.01%)
Dr. Patricia Makhesha Gauteng, South Africa	Managing Director of Ivanplats since September 2014	Managing Director of Ivanplats (September 2014 – present), Vice President, Transformation and Stakeholder Relations of Ivanhoe (June 2014 – September 2016); Vice President, Community Relations of Ivanhoe (March 2014 – June 2014); Founder and Chief Executive Officer of MMMS Consulting (October 2011-February 2014); Senior Executive, Transformation and Human Capital Management of South African Forestry Company (June 2009 – September 2011)	Nil
Louis Watum Gauteng, South Africa	General Manager of Kamoa-Kakula Project since November 2016	General Manager of Kamoa-Kakula Project (November 2016 – present); General Manager of Kamoa Copper SA (March 2015 – present); Managing Director, DRC Operations of Ivanhoe (December 2014 – November 2016); Country Manager for Randgold Resources Ltd. (November 2009 – November 2014); General Manager of Kibali Goldmines SPRL (November 2009 – November 2014)	Nil

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 shareholdings presented in this column exclude Options, DSUs and RSUs, if any, held by such directors and officers and the percentage values are calculated to include the Class A Shares, without reference to any Class A Shares that may be issuable upon the exercise of Options, DSUs and RSUs.

(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 Nominating and Corporate Governance Committee.

(7) Member of the Compensation and Human Resources Committee.

(8) Member of the Sustainability Committee.

(9) Chair of the Audit Committee.

(10) Chair of the Compensation and Human Resources Committee.

(11) Member of the Technical Committee.

(12) Chair of the Technical 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 176,892,820 Class A Shares, representing 22.35% of the issued and outstanding Class A Shares, excluding any Options, DSUs and RSUs held by such directors and officers.

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.

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. Robert Friedland served as the Executive Co-Chairman of Ivanhoe Energy Inc. ("**Ivanhoe Energy**") from May 2008 to October 2014 and was Deputy Chairman from June 1999 to May 2008, President from May 2008 to May 2010, and Chief Executive Officer from May 2008 to December 2011. Mr. Peter Meredith served as a director of Ivanhoe Energy from December 2007 to December 2014. On February 20, 2015, Ivanhoe Energy filed a Notice of Intention to Make a Proposal under subsection 50.4(1) of the *Bankruptcy and Insolvency Act (Canada).* On June 2, 2015, having failed to file a proposal, Ivanhoe Energy was assigned into bankruptcy. Ivanhoe Energy was dissolved on May 16, 2017. Cease trade orders were issued against Ivanhoe Energy in Alberta (July 15, 2015), Quebec (May 7, 2015), Manitoba (May 6, 2015), Ontario (May 4, 2015) and British Columbia (April 14, 2015) in respect of the company failing to file its audited financial statements and associated filings for the year ending December 31, 2014, which cease trade orders remain in effect as at the date of this AIF.

Mr. Ian 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.

Mr. Cockerill was a non-executive director and Vice Chairman of African Minerals Limited from July 2013 to December 2014. Subsequent to his resignation from the board of directors of African Minerals Limited, the High Court in London appointed joint administrators of African Minerals on March 26, 2015 after it failed to make a scheduled bond payment.

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 and private 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. In addition, if and when required, the Company has and will develop internal protocols and policies to assist in managing any actual or existing conflicts of interest.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

Since January 1, 2017, 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 exceed 10% of the Company's current assets, and the Company is unaware of any such proceedings being contemplated.

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), William Hayden and Livia Mahler,

each of whom is "independent" within the meaning of NI 52-110.

Relevant Education and Experience

Each of Oyvind Hushovd (Chair), William Hayden and Livia Mahler, 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 or she 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 PricewaterhouseCoopers Inc., Chartered Accountants, during the financial year ended December 31, 2017 and 2016:

	2017	**2016**
	($)[6]	($)[6]
Audit Fees[1]	293,882	256,835
Audit Related Fees[2]	56,089	47,719
Tax Fees[3]	14,000	12,000
All Other Fees[4]	-	45,482
Total:[5]	**363,971**	**362,036**

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.

(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.

(6) These amounts were converted to US$ using the average exchange rate during the financial year which it relates to.

INTERESTS OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

The Company is a party to a cost sharing agreement with Kaizen Discovery Inc. (TSX-V), GoviEx Uranium Inc. (TSX-V), Peregrine Diamonds Ltd. (TSX), Cordoba Minerals Corp. (TSX-V), High Power Exploration Inc., Ivanhoe Capital Corporation, JD Holding 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, London and Tokyo. The Company also shares the costs of employing administrative and certain management personnel in these offices. In 2017, the Company's share of these costs was $3.7 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 $2.0 million towards aircraft operating costs in 2017.

TRANSFER AGENTS AND REGISTRARS

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

MATERIAL CONTRACTS

The only material contracts entered into by the Company or on its behalf during the financial year ending December 31, 2017 or entered into prior to December 31, 2017 and which are still in force, other than contracts entered into in the ordinary course of business, are:

1. Consolidated Investors' Agreement and BEE Transaction. See "*Material Contracts - Consolidated Investors' Agreement and BEE Transaction*";

2. Kipushi Joint Venture Agreement. See "*Material Contracts – Kipushi Joint Venture Agreement*";

3. SNEL Finance Agreement. See "*Material Contracts - SNEL Finance Agreement*";

4. Kamoa Holding Shareholder and Governance Agreement. See "*Material Contracts - Kamoa Holding Shareholder and Governance Agreement*"; and

5. Kamoa Holding Share Transfer Agreement. See "*Material Contracts - Kamoa Holding Share Transfer 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.

Consolidated Investors' Agreement and BEE Transaction

In June 2014, a 26% interest in the Platreef Project was transferred by Ivanplats Holding to K2014089596 (South Africa) (RF) Proprietary Limited ("**Platreef BEE Co**"), a special purpose vehicle established for the purpose of satisfying the broad based black economic empowerment requirements of South Africa's mining laws and in fulfilment of the requirements of the Platreef Mining Right ("**BEE Transaction**").

The shareholder composition of Platreef BEE Co complies with the applicable South African legislation regarding empowerment of HDSAs and is made up of:

- a special purpose vehicle, K2014043822 (South Africa) (RF) Proprietary Limited ("**Community TrustCo**") its sole shareholder being a trust established for the benefit of 20 local communities adjacent to and affected by the Platreef Project ("**Platreef Community Umbrella Trust**"). Community TrustCo holds 76.92% of the shares in Platreef BEE Co (representing an effective 20% participating interest in the Platreef Project for the Platreef Community Umbrella Trust);

- a special purpose vehicle, K2014043829 (South Africa) (RF) Proprietary Limited ("**Employee TrustCo**"), its sole shareholder being a trust established for the benefit of HDSA non-managerial employees of Ivanplats and/or Ivanhoe Mines SA (Pty) Ltd. and/or an affiliate of Ivanplats where the employee's role and responsibilities have been directly or indirectly related to the Platreef Project ("**Platreef Equity Participation Trust**"). Employee TrustCo holds 11.54% of the shares in Platreef BEE Co (representing an effective 3% participating interest in the Platreef Project for the Platreef Equity Participation Trust); and

- a special purpose vehicle, K2014043815 (South Africa) (RF) Proprietary Limited ("**EntrepreneurCo**"). EntrepreneurCo holds 11.54% of the shares in Platreef BEE Co (representing an effective 3% participating interest in the Platreef Project for the HDSA entrepreneurs), which consortium of HDSA entrepreneurs is made up of local HDSA

entrepreneurs (including Ivanplats managerial employees who elected to participate in this consortium), the majority of whom are local HDSA entrepreneurs who are registered on Ivanplats' procurement database.

The 26% interest in the Platreef Project was transferred by Ivanplats Holding to Platreef BEE Co for a purchase price of ZAR2.703 billion which was settled by way of Ivanplats Holding advancing a loan to Platreef BEE Co for the full amount of the purchase price ("**Ivanplats Vendor Loan**"). A small portion of the Ivanplats Vendor Loan (in the amount of R312 million) was subsequently repaid by way of EntrepreneurCo having contributed cash funding to Platreef BEE Co, which cash funding was sourced by the HDSA entrepreneurs' own cash resources and loans provided by Ivanplats Holding to certain of the EntrepreneurCo shareholders.

The Ivanplats Vendor Loan, which was subsequently ceded to Community TrustCo and Employee TrustCo, accrued interest at 75% of the South African prime rate of interest and was discharged by way of preference shares ("**TrustCo Preference Shares**") being issued by each of Community TrustCo and Employee TrustCo to Ivanplats Holding.

The TrustCo Preference Shares have a dividend rate equal to 75% of the South African prime rate of interest and are to be redeemed in full within a period not exceeding 20 years. After providing for taxes and administrative expenses, Community TrustCo and Employee TrustCo are obliged to use 80% of the proceeds received by them from Platreef BEE Co to settle their obligations pertaining to the TrustCo Preference Shares. Such proceeds are to be used, first, to make prevailing dividend payments, second, to settle accrued dividend payments and thereafter to redeem the TrustCo Preference Shares. The balance of the proceeds received by Community TrustCo and Employee TrustCo (20%) are to be distributed by them to their respective shareholders, being the Platreef Community Umbrella Trust and to the Platreef Equity Participation Trust, respectively. The obligations of each of Community TrustCo and Employee TrustCo to Ivanplats Holding in terms of the TrustCo Preference Shares are secured by a pledge and cession over their shares in, and claims against, Platreef BEE Co.

In light of the circumstances where Ivanplats will only be in a position to make dividend distributions to its shareholders some time into the future after the Platreef Project development capital has been repaid, Ivanplats has undertaken to contribute an annual amount of R11 million to the Platreef Community Umbrella Trust until such time as Ivanplats has declared and made payment of its first dividend to the holders of its shares.

As a consequence of the implementation of the BEE Transaction, a Consolidated Investors' Agreement was concluded in June 2014 by and among Ivanhoe, Itochu, ITC Platinum, Ivanplats Holding and Platreef BEE Co which agreement replaced the Joint Operation and Investment Agreement by and among Ivanhoe, Itochu, ITC Platinum and Ivanplats Holding.

In terms of the Consolidated Investors' Agreement, additional funding required by the Platreef Project (after the initial investment funding provided by Itochu and ITC Platinum has been exhausted) may be provided *pro rata* by the participants in accordance with their respective participation interests in the Platreef Project. However, if and to the extent that Platreef BEE Co is unable to fund its proportionate share, Ivanhoe is obliged to provide such funding on behalf of Platreef BEE Co. Such arrangements are consistent with the undertaking previously given by Ivanhoe in the Joint Operation and Investment Agreement in terms of which it undertook to bear the costs associated with the participation by HDSAs in the Platreef Project and is consistent with the current requirements of the South African mining laws in terms of which 26% HDSA ownership participation is required to be maintained. Platreef BEE Co's shareholding in Ivanplats will accordingly not be diluted as a result of its failure to advance funding to Ivanplats.

The Consolidated Investors' Agreement retains the same arrangements set out in the Joint Operation and Investment Agreement pertaining to Itochu and ITC Platinum agreeing 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 and Itochu and ITC Platinum being entitled to off-take from the Platreef Project *pro rata* to their participation interest in the Platreef Project.

The Platreef Project is to be managed by Ivanhoe, subject to the supervision and direction of a Management Committee, Technical Committee and the Ivanplats board of directors. In each of these management bodies each participant is entitled to representation and entitlement to vote that is in proportion to their respective participation interest in the Platreef Project. Decisions of the Ivanplats board of directors, Management Committee and Technical Committee are generally made by majority vote but various matters (such as the approval of work programs or budgets of Ivanplats, material changes to the Platreef Project, the sale of any of Ivanplats' material assets and the acquisition by Ivanplats of any material assets) require the prior approval of all of the Ivanplats participants.

All retained earnings in Ivanplats will be either invested into the Platreef Project in accordance with the instructions of the Management Committee or paid as dividends.

The participants in the Platreef Project have granted each other various rights and entitlements pertaining to their on-going participation in the Platreef Project, including the following:

- Each of Ivanhoe and Itochu and ITC Platinum has granted each other respective rights of pre-emption in relation to a disposal by them of their participation interests in the Platreef Project.

- Platreef BEE Co is not entitled to dispose of its participation interest in Ivanplats until the later of 26 June 2022 or Platreef BEE Co having settled all outstanding funding provided by Ivanhoe or any of its affiliates to BEE Co. Platreef BEE Co has granted a right of pre-emption over its participation interest in the Platreef Project first to Ivanhoe and thereafter to Itochu and ITC Platinum, after which Platreef BEE Co is only entitled to dispose of its participation interest to another entity that complies with the HDSA ownership requirements of the South African mining laws where such disposal would not affect the on-going validity of the Platreef Mining Right.

- In the event of there being an actual or proposed change in control of Ivanhoe, Ivanplats or Platreef BEE Co, Ivanhoe has undertaken on a best endeavours basis to facilitate the acquisition by a third party of the participation interests of Itochu and ITC Platinum and Platreef BEE Co should they so require.

- In the event that the combined effective participation interest of Itochu and ITC Platinum in the Platreef Project falling below 2%, Ivanhoe is entitled to acquire their participation interest in exchange for a 1% net smelter returns royalty.

- Itochu and ITC Platinum are granted a right to convert their shares in Ivanplats Holding (or in Ivanplats to the extent owned by either Itochu or ITC Platinum) into Class A Shares following: (i) a breach by Ivanhoe of the Consolidated Investors' Agreement that remains uncured for more than 180 days following notice of the breach; or (ii) the occurrence of certain specified insolvency events relating to Ivanhoe.

- Customary come along and tag along rights are granted where Ivanhoe's shareholding in Ivanplats Holding falls below 80% or its effective participating interest in the Platreef Project falls below 54%.

- In the event that Platreef BEE Co ceases to qualify for HDSA ownership purposes in terms of the South African mining laws or Platreef BEE Co undergoes a change of control, or any participant in the Platreef Project breaches a terms of the Consolidated Investors' Agreement, suffers certain specified insolvency events or becomes disqualified under any applicable law to hold its participation interest in the Platreef Project, then a deemed offer over that participant's participation interest in favour of the other participants arises.

The Consolidated Investors' Agreement also contains customary terms for an agreement of this nature, including customary representations and warranties from the parties, permitted intra-group and nominee disposals, support and good faith, dispute resolution, confidentiality and liability limitation provisions.

Ivanplats has also adopted a new Memorandum of Incorporation (being its constituent document in terms of South African company laws) that is consistent with the provisions of the Consolidated Investors' Agreement.

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 SARL 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-Kakula Project – Pre-feasibility Study and Preliminary Economic Assessment - Infrastructure*").

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 SARL, 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 12 months, termination is possible following a determination by the parties that the upgrade may not be completed within one year. An event of force majeure does not relieve SNEL from its obligation to service / pay the Ivanhoe Mines Energy SNEL Loan.

Kamoa Holding Shareholder and Governance Agreement

The Company and Zijin Mining have agreed to a strategic co-development of the Kamoa Copper Project in the Democratic Republic of Congo. Zijin Mining, through its subsidiary, Gold Mountains (H.K.) International Mining Company Limited, has acquired a 49.5% share interest in Kamoa Holding, a former subsidiary of the Company that presently owns 80% of the Kamoa-Kakula Project. In addition, Crystal River acquired a 1% share interest in Kamoa Holding.

The relationship between the Company, Zijin Mining and Crystal River is governed by the Shareholder, Governance and Option Agreement ("**SGO Agreement**"), as amended and restated on December 7, 2016.

Zijin Mining has committed to use its best efforts to arrange or procure project financing for 65% of the capital required to develop the first phase of the Kamoa-Kakula Project, as set out in the feasibility study, without any recourse, and on terms acceptable to the Company, and Zijin Mining will provide any and all required completion guarantees relating to the securing of project financing for the Kamoa-Kakula Project. Upon the successful arrangement or procurement of project financing, Zijin Mining will have the right to acquire Crystal River's 1% share interest in Kamoa Holding. If the Company arranges project financing for 65% of the capital required to develop the first phase of the Kamoa-Kakula Project, then the Company will be entitled to acquire the 1% interest in Kamoa Holding held by Crystal River. If the 1% Option has not been exercised within seven years from the delivery of the feasibility study (because, for example, the project financing has not been arranged by that time), the option will expire and each of the Company and Zijin Mining will then have the right to buy one-half of the 1% share from Crystal River, which would then result in an equivalent 50%/50% ownership split between the parties.

The SGO Agreement also provide that upon exercise of the 1% Option, for an amount to be determined by independent expert valuators, Zijin Mining will be required to arrange or procure project financing for all subsequent phases of the Kamoa-Kakula Project, without any recourse, and on terms acceptable, to the Company but provided that such subsequent phases are demonstrated to be economically feasible and shareholders have approved a development plan in accordance with the SGO Agreement. In addition, Zijin Mining will provide any and all required completion guarantees relating to the securing of the subsequent project financing for Kamoa-Kakula's subsequent development. If the Company arranges the project financing for the first phase of the Kamoa-Kakula Project, then it shall provide the completion guarantees, and the Company shall have the option to buy the 1% share from Crystal River.

Each shareholder is required to fund Kamoa Holding in an amount equivalent to its proportionate shareholding interest.

Provided that Zijin Mining has arranged or procured project financing for 65% of the capital required to develop the first phase of the Kamoa-Kakula Project, Zijin Mining will be entitled to negotiate an offtake agreement, on commercial, arm's-length terms acceptable to the Company, to acquire up to that portion of the total production from the Kamoa-Kakula Project attributable to Kamoa Holding for at least the term of the project financing.

The SGO Agreement also provides that all key decisions regarding the development and operation of the Kamoa-Kakula Project will be made by Kamoa Holding's Board of Directors, which initially will consist of five members: two designated by the Company, two designated by Zijin Mining and one designated by Crystal River.

Upon the exercise of the 1% Option, either the Company or Zijin Mining will assume Crystal River's right to designate one director, meaning either the Company or Zijin Mining could designate a total of three directors. However, Kamoa Holding's Board of Directors will not be permitted to make certain decisions without certain approvals of Kamoa Holding's shareholders. For example:

- establishment of the Kamoa-Kakula Project's long-term development plan and other typical minority shareholder rights will require approval of 80.01% of shareholders; and

- approval of the annual program and budget will require approval of 66.67% of shareholders.

Shareholder cash calls will be based on either an annual program and budget or an interim, sustaining annual program and budget.

Zijin Mining also has agreed to the inclusion of a 10-year standstill provision in the SGO Agreement, meaning that Zijin Mining will only be permitted to acquire further shares of the Company on a consensual, negotiated basis.

Kamoa Holding Share Transfer Agreement

The Company and Zijin Mining signed an agreement with the DRC Government on November 11, 2016 to transfer an additional 15% interest in Kamoa Copper. Under the terms of the agreement Kamoa Holding transferred 300 Class A shares in the capital of Kamoa Copper, representing 15% of Kamoa Copper's share capital, to the DRC government, in consideration for a nominal cash payment and other guarantees from the DRC government summarized below. At this time, the DRC already owned 100 non-dilutable Class B shares, representing 5% of Kamoa Copper's share capital. The parties agreed that the 300 Class A shares shall be non-dilutable until the earlier of (i) five years from the date of the first commercial production and (ii) the date on which the DRC government ceases to hold all of its 300 Class A shares.

In addition, Kamoa Holding undertook to provide all shareholder loans to Kamoa Copper and/or procure financing from third parties for the development of the Kamoa-Kakula Project. The interest on all shareholder loans will be LIBOR plus 7 percent. The parties acknowledged that they shall not be entitled to any dividends from Kamoa Copper prior to the repayment of 80% of all shareholder loans, currently totaling US$650 million, and 100% of any financing provided by a third party.

The DRC government reaffirmed Kamoa Copper's mineral tenements and guaranteed that the Kamoa-Kakula Project will not be subject to any taxes or duties other than those legally required by the applicable statutory and regulatory provisions for the life of the project.

At Kamoa Copper's request and subject to the satisfaction of the applicable conditions, the DRC will provide its assistance in obtaining the advantages contemplated by the DRC's special law – No. 14/005, enacted to facilitate Sino-Congolese cooperation – relating to the tax, customs, parafiscal tax, non-tax revenues and currency exchange regime applicable to cooperation projects.

Kamoa Holding will have a pre-emptive right, and right of first refusal, to purchase any or all of the DRC's shares in Kamoa Copper should the DRC wish to directly or indirectly sell, transfer or otherwise dispose of any or all of its shares.

The agreement will be governed by the laws of the DRC. Any dispute will be subject to binding arbitration, conducted in the French language, in Paris, France, in full accordance with the Convention on the Settlement of Investment Disputes between States and Nationals of Other States. An arbitral decision will be subject to enforcement under the New York Convention of 1958, to which the DRC is a contracting party.

INTERESTS OF EXPERTS

Names of Experts

PricewaterhouseCoopers Inc., Chartered Accountants, have advised that they are independent of the Company within the meaning of Canadian Generally Accepted Auditing Standards.

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 March 23, 2018 titled "*Kamoa-Kakula 2018 Resource Update"* prepared by OreWin Pty Ltd, Amec, SRK Consulting (South Africa) (Pty) Ltd. and Stantec Consulting International LLC covering the Company's Kamoa-Kakula Project with the following Qualified Person authors:
    - Bernard Peters employed by OreWin Pty Ltd as Technical Director – Mining;
    - Dr Harry Parker employed by Amec as Technical Director;
    - Gordon Seibel employed by Amec as Principal Geologist;
    - William Joughin employed by SRK Consulting (South Africa) (Pty) Ltd as Principal Consultant;
    - Jon Treen employed by Stantec Consulting International LLC as Mining Business Line Leader; and
    - Dean David employed by Amec as Technical Director – Process,
- technical report dated September 4, 2017 titled "*Platreef 2017 Feasibility Study"* prepared by OreWin Pty Ltd, Amec, SRK Consulting Inc., Stantec Consulting International LLC, DRA Projects (Pty) Ltd. and Golder Associates Africa (Pty) Ltd covering the Company's Platreef Project with the following Qualified Person authors:
    - Bernard Peters employed by OreWin Pty Ltd as Technical Director – Mining;
    - Dr Harry Parker employed by Amec as a Technical Director;
    - William Joughin employed by SRK Consulting (South Africa) (Pty) Ltd as Principal Consultant;
    - Jon Treen employed by Stantec Consulting International LLC as Mining Business Line Leader;
    - Val Coetzee employed by DRA Projects (Pty) Ltd as Process Manager; and
    - Francois Marais employed Golder Associates Africa (Pty) Ltd as Principal Strategic Advisor Engineering,
- technical report dated January 25, 2018 titled "*Kipushi 2017 Prefeasibility Study*" prepared by OreWin Pty Ltd, MSA Group (Pty) Ltd, SRK Consulting (South Africa) (Pty) Ltd and MDM (Technical) Africa Pty Ltd covering the Company's Kipushi Project with the following Qualified Person authors:

- Bernard Peters employed by OreWin Pty Ltd as Technical Director – Mining;
- Michael Robertson employed by The MSA Group (Pty) Ltd (MSA) as Principal Consulting Geologist;
- Jeremy Witley employed by The MSA Group (Pty) Ltd as Principal Resource Consultant;
- William Joughin employed by SRK Consulting (South Africa) (Pty) Ltd as Principal Consultant; and
- John Edwards employed by MDM (Technical) Africa Pty Ltd as Chief Metallurgist.

Interests of Experts

To the knowledge of the Company, as of the date hereof, none of PricewaterhouseCoopers Inc., OreWin Pty Ltd, Amec, SRK Consulting Inc., Stantec Consulting International LLC, DRA Projects (Pty) Ltd., MSA Group (Pty) Ltd, Golder Associates Africa (Pty) Ltd and MDM (Technical) Africa Pty Ltd 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 regarding the Company including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities, and securities authorized for issuance under the Company's RSU Plan, DSU Plan and amended and restated equity incentive plan (options) to purchase Class A Shares of the Company, is contained in a management information circular dated May 8, 2017 in respect of the Company's most recently held shareholder meeting and available on SEDAR at www.sedar.com, and 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 June 28, 2018, which will also be available on SEDAR at www.sedar.com and on the Company's website at www.ivanhoemines.com. Additional financial information is contained in the Company's consolidated financial statements and management's discussion and analysis as at and for the period ended December 31, 2017 and 2016 and available on SEDAR at www.sedar.com. Additional information relating to the Company may be found on SEDAR at 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:

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

"**Amec**" means Amec Foster Wheeler E&C Services Inc. (which changed its name as of January 2015), and includes its affiliated entities which collectively supply consultancy, engineering and project management services internationally, including AMEC GRD SA, AMEC Australia Pty Ltd, and AMEC E&C Services Inc.;

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

"**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;

"**Crystal River**" means Crystal River Global Limited;

"**Deferred Share Unit**" means the right of non-executive directors to receive Class A Shares, or a cash payment equal to the equivalent thereof, or a combination thereof, following the prescribed vesting period of deferred share unit ("**DSU**") awards and satisfaction of any required performance conditions, subject to the terms and provisions set forth in the DSU Plan;

"**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;

"**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;

"**Ivanplats**" means Ivanplats Proprietary Limited, formerly Platreef Resources Proprietary Limited, a private company incorporated in accordance with the laws of South Africa, a majority owned subsidiary of Ivanplats Holding and the subsidiary through which Ivanhoe indirectly holds its interest in the Platreef Project;

"Ivanplats Holding" means Ivanplats Holding Sàrl, formerly Beales Sàrl, a company re-incorporated under Luxembourg laws, and a majority owned subsidiary of Ivanhoe through which Ivanhoe indirectly holds its interest in the Platreef Project;

"**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, Ivanplats Holding and Ivanhoe dated May 26, 2011;

"**Kamoa Copper**" means Kamoa Copper SA, a company registered in the DRC, a wholly-owned indirect subsidiary of Ivanhoe;

"**Kamoa Exploitation Licences**" means exploitation permits 12873, 13025 and 13026, which cover an area of 397.4 km^2, approved by the government of the DRC on August 20, 2012;

"**Kamoa Holding**" means Kamoa Holding Limited, a corporation governed by the laws of Barbados, that presently owns 80% of Kamoa Copper;

"**Kamoa-Kakula Project**" means Kamoa Copper's copper project located in Lualaba Province, DRC, and which lies at the western end of the Central African Copperbelt;

"**Kamoa-Kakula Technical Report**" means the technical report dated March 23, 2018 prepared by OreWin Pty Ltd, Amec, SRK Consulting (South Africa) (Pty) Ltd. and Stantec Consulting International LLC, covering Kamoa Holding's Kamoa-Kakula Project;

"**KICO**" means Kipushi Corporation SA, 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 technical report dated January 25, 2018 prepared by OreWin Pty Ltd, MSA Group (Pty) Ltd, SRK Consulting (South Africa) (Pty) Ltd and MDM (Technical) Africa Pty Ltd 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 and Macalacaskop properties, approximately 280 km northeast of Johannesburg, South Africa held 64% by Ivanhoe. See "*Description of the Business - Platreef Project*";

"**Platreef Technical Report**" means the technical report effective September 4, 2017, prepared by OreWin Pty Ltd, Amec Foster Wheeler, SRK Consulting Inc., Stantec Consulting International LLC, DRA Projects (Pty) Ltd. and Golder Associates Africa (Pty) Ltd, covering the Company's Platreef Project;

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

"**Projects**" mean collectively, the Kamoa-Kakula 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;

"**Restricted Share Unit**" means the right of certain of the Company's officers, employees and consultants to receive Class A Shares, or a cash payment equal to the equivalent thereof, or a combination thereof, following the prescribed vesting period of Restricted Share Unit ("**RSU**") awards and satisfaction of any required performance conditions, subject to the terms and provisions set forth in the RSU Plan and the applicable award grant agreement;

"**Rietfontein**" means the farm Rietfontein Number 2, Registration Division KS, in the Limpopo Province of South Africa;

"**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;

"**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 SARL 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;

"**TSX-V**" means the TSX Venture 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;

"**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;

"**Warrants**" means Class A Share purchase warrants, each of which entitled the holder to purchase one Class A Share of the Company at a price of C$1.80 prior to December 10, 2015; and

"**Zijin Mining**" means Zijin Mining Group Co., Ltd.

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 90º 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;

"**CCR&P**" means the controlled convergence room and pillar mining method;

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

"**chromite**" means an iron chromium oxide mineral belonging to the spinel group and commonly described using the chemical formula $FeCr_2O_4$. 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;

"**CRF**" mean cemented rock fill;

"**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;

"**D&F**" means the drift and fill mining method;

"**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;

"**DMS**" means dense media separation, a method of concentrating ore proposed at Kipushi;

"**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**" or "**FS**" 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 of 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;

"**mRL**" means metres reduced level, i.e. metres below mine surface;

"**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;

"**ORWRDP**" means the Olifants River Water Resources Development Project;

"**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**" or "**PFS**" 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;

"**Preliminary Economic Assessment"** or **"PEA**" is a study, other than a Pre-feasibility Study or Feasibility Study, that includes an economic analysis of the potential viability of Mineral Resources;

"**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(Si,aluminium)2O6 (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;

"**R&P**" mean the room and pillar mining method;

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

"**SLOS**" means the sub-level long-hole open stoping mining method;

"**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 deposi**t" 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;

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

"**Au**" means gold;

"**AS**" means arsenic;

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

"**CRMs**" mean certified reference materials;

"**Cu**" means copper;

"**Cr**" means chrome;

"**Fe**" means iron;

"**g/t**" means grams per tonne;

"**IRR**" means internal rate of return;

"**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 millimeters;

"**M**" means million;

"**Moz**" means million oz;

"**Mt**" means million tonnes;

"**Mtpa**" means million tonnes per annum;

"**MW**" means megawatt;

"**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;

"**Rh**" means rhodium;

"**S**" means sulphur;

"**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"

AUDIT COMMITTEE CHARTER

I. Purpose

The primary objective of the Audit Committee (the "**Committee**") of 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 a 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. Oversee and administer the Company's policies for the receipt and review of complaints regarding accounting matters:

    (a) Accounting. Establish procedures for (i) the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters and (ii) the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters.

    (b) Other. Receive complaints under the Company's policy on the Handling of Complaints – Whistle-Blowing (the "**Whistleblower Policy**") and determine if such complaints are within the scope of (a) and if so address such complaints, and if beyond the scope of (a), direct such complaints to management or the appropriate committee of the Board; and

    (c) Review these procedures annually.

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.

(f) 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.