



**MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE MONTHS ENDED MARCH 31, 2017**

***DATED: MAY 10, 2017***

## INTRODUCTION

This management's discussion and analysis (MD&A) should be read in conjunction with the unaudited condensed consolidated interim financial statements of Ivanhoe Mines Ltd. ("Ivanhoe", "Ivanhoe Mines" or the "Company"), for the three months ended March 31, 2017, which have been prepared in accordance with International Accounting Standard 34 - Interim Financial Reporting (IAS 34) and the audited consolidated financial statements of Ivanhoe for the years ended December 31, 2016 and 2015, which have been prepared in accordance with International Financial Reporting Standards (IFRS). All dollar figures stated herein are in U.S. dollars, unless otherwise specified. References to "C\$" mean Canadian dollars and references to "R" mean South African Rands.

The effective date of this MD&A is **May 10, 2017**. Additional information relating to the Company is available on SEDAR. Certain statements contained in the MD&A are forward-looking statements that involve risks and uncertainties. See "*Forward-Looking Statements*" and "*Risk Factors*".

## FORWARD-LOOKING STATEMENTS

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

Such statements include without limitation, the timing and results of: (i) statements regarding Shaft 1 providing initial access for early underground development at the Platreef Deposit; (ii) statements regarding the station development of Shaft 1 at the 450, 750, 850 and 950 metre levels; (iii) statements regarding the sinking of Shaft 1, including that a sinking rate of 45 metres per month is expected; (iv) statements regarding Shaft 1 reaching the planned, final depth at 980 metres below surface in 2018; (v) statements regarding the timing of the commencement of Shaft 2 development, including that construction of the early works is to commence in Q2 2017 and will take approximately 12 months to complete; (vi) statements regarding the operational and technical capacity of Shaft 1; (vii) statements regarding the internal diameter and hoisting capacity of Shaft 2; (viii) statements regarding the Company's plans to develop the Platreef Mine in three phases: an initial annual rate of four million tonnes per annum (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; (ix) statements regarding the planned underground mining methods of the Platreef Project including long-hole stoping and drift-and-fill mining; (x) statements regarding peak water use of 10 million litres per day at the Platreef Project and development of the Pruissen Pipeline Project; (xi) statements regarding the Platreef Project's estimated electricity requirement of 100 million volt-amperes; (xii) statements regarding the completion of a feasibility study at the Platreef Project in Q2 2017; (xiii) statements regarding the declines having been designed to intersect the high-grade copper mineralization in the Kansoko Sud area during the second quarter of 2017; (xiv) statements regarding the completion of an updated Mineral Resource Estimate at the Kamoa-Kakula Project in May 2017 and an updated preliminary economic assessment in Q3 2017; (xv) statements regarding the timing, size and objectives of drilling and other exploration programs for 2017 and future periods including a metallurgical drilling campaign at the Kakula deposit planned for Q2 2017; (xvi) statements regarding the implementation of the Social and Labour Plan at the Platreef Project and pledged expenditure of R160 million; (xvii) statements that the Kakula box-cut is expected to take approximately five months; and (xviii) statements regarding expected expenditure for the remainder of 2017 of \$50 million on further development at the Platreef Project; \$26 million at the

Kipushi Project; \$4 million on regional exploration in the DRC; and \$11 million on corporate overheads – as well as its proportionate funding of the Kamoa-Kakula Project, expected to be \$35 million for the remainder of 2017.

As well, all of the results of the pre-feasibility study of the Kamoa-Kakula Project and preliminary economic assessment of development options for the Kakula deposit, the pre-feasibility study of the Platreef Project and the preliminary economic assessment of the Kipushi Project, constitute forward-looking statements or information, and include future estimates of internal rates of return, net present value, future production, estimates of cash cost, proposed mining plans and methods, mine life estimates, cash flow forecasts, metal recoveries, estimates of capital and operating costs and the size and timing of phased development of the projects. Furthermore, with respect to this specific forward-looking information concerning the development of the Kamoa-Kakula, Platreef and Kipushi Projects, the Company has based its assumptions and analysis on certain factors that are inherently uncertain. Uncertainties include: (i) the adequacy of infrastructure; (ii) geological characteristics; (iii) metallurgical characteristics of the mineralization; (iv) the ability to develop adequate processing capacity; (v) the price of copper, nickel, zinc, platinum, palladium, rhodium and gold; (vi) the availability of equipment and facilities necessary to complete development; (vii) the cost of consumables and mining and processing equipment; (viii) unforeseen technological and engineering problems; (ix) accidents or acts of sabotage or terrorism; (x) currency fluctuations; (xi) changes in regulations; (xii) the compliance by joint venture partners with terms of agreements, (xiii) the availability and productivity of skilled labour; (xiv) the regulation of the mining industry by various governmental agencies; and (xiv) political factors.

This MD&A 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. Estimates of Mineral Reserves provide more certainty but still involve similar subjective judgments. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The accuracy of any such estimates is a function of the quantity and quality of available data, and of the assumptions made and judgments used in engineering and geological interpretation (including estimated future production from the Company's 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 ultimately may prove to be inaccurate. Mineral Resource or Mineral Reserve estimates may have to be re-estimated based on: (i) fluctuations in copper, nickel, zinc, platinum group elements (PGE), gold or other mineral prices; (ii) results of drilling; (iii) metallurgical testing and other studies; (iv) proposed mining operations, including dilution; (v) the evaluation of mine plans subsequent to the date of any estimates and/or changes in mine plans; (vi) the possible failure to receive required permits, approvals and licenses; and (vii) changes in law or regulation.

Forward-looking statements and information 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 or information, including, but not limited to, the factors discussed below and under "Risk Factors", as well as unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities; the failure of parties to contracts with the Company to perform as agreed; social or labour unrest; changes in commodity prices; and the failure of exploration programs or studies to deliver anticipated results or results that would justify and support continued exploration, studies, development or operations.

Although the forward-looking statements contained in this MD&A are based upon what management of the Company believes are reasonable assumptions, the Company cannot assure investors that actual results will be consistent with these forward-looking statements. These forward-looking statements are made as of the date of this MD&A and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the Company does not assume any obligation to update or revise

the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this MD&A.

The Company's actual results could differ materially from those anticipated in these forward-looking statements as a result of the factors set forth below in the "Risk Factors" section beginning on page 35 and elsewhere in this MD&A.

## REVIEW OF OPERATIONS

Ivanhoe Mines is a mineral exploration and development company. The Company's financial performance is primarily affected by ongoing exploration and development activities being conducted at its three material properties. The Company has no producing properties and does not have operating revenues. The Company expects to fund all of its exploration and development activities through debt and equity financing until operating revenues are generated. The Company's material properties consist of:

- **The Platreef Project.** Construction of the planned Platreef mine is now underway on the Company's discovery of platinum, palladium, nickel, copper, gold and rhodium on the Northern Limb of South Africa's Bushveld Complex. Ivanhoe holds a 64% interest in Platreef, the South African beneficiaries of a broad-based, black economic empowerment structure have a combined 26% stake in the Platreef Project and the remaining 10% is owned by a Japanese consortium of ITOCHU Corporation and its affiliate, ITC Platinum Development Ltd.; Japan Oil, Gas and Metals Corporation; and Japan Gas Corporation. (See "*Platreef Project*".)
- **The Kipushi Project.** The existing Kipushi Mine is located on the Central African Copperbelt in the Democratic Republic of Congo's (DRC) southern Haut-Katanga province, one of Africa's major mining hubs. The mine, which operated between 1924 and 1993, is approximately 30 kilometres southwest of the provincial capital, Lubumbashi, and less than one kilometre from the DRC-Zambia border. Ivanhoe holds a 68% interest in Kipushi; the state-owned mining company, Gécamines, holds the remaining 32% interest. (See "*Kipushi Project*".)
- **The Kamoa-Kakula Copper Project.** A joint venture between Ivanhoe Mines and Zijin Mining Group Co., Ltd., ("Zijin" or "Zijin Mining") within the Central African Copperbelt in the Democratic Republic of Congo's southern Lualaba province. Following the signing of an agreement with the DRC government in November 2016 to transfer an additional 15% interest in the Kamoa-Kakula Project to the government of the DRC, Ivanhoe Mines and Zijin Mining each hold an indirect 39.6% interest in the Kamoa-Kakula Project, Crystal River Global Limited holds an indirect 0.8% interest and the DRC government holds a direct 20% interest. The Kamoa-Kakula Project is independently demonstrated as the largest copper discovery ever made in the history of mining on the African continent and already ranks among the 10 largest copper deposits in the world (See "*Kamoa-Kakula Project*".)

## **PLATREEF PROJECT**

The Platreef Project is owned by Ivanplats (Pty) Ltd, which is 64%-owned by Ivanhoe Mines. A 26% interest is held by Ivanplats' historically-disadvantaged broad-based, black economic empowerment (B-BBEE) partners, which include 20 local host communities with a total of approximately 150,000 people, project employees and local entrepreneurs. In January 2017, Ivanplats reconfirmed its Level 3 status in its third verification assessment on a B-BBEE scorecard. A Japanese consortium of ITOCHU Corporation and its affiliate, ITC Platinum, plus Japan Oil, Gas and Metals National Corporation and JGC Corporation, owns a 10% interest in Ivanplats, which it acquired in two tranches for a total investment of \$290 million.

The Platreef Project hosts an underground deposit of thick, platinum-group metals, nickel, copper and gold mineralization in the Northern Limb of the Bushveld Igneous Complex, approximately 280 kilometres northeast of Johannesburg and eight kilometres from the town of Mokopane in Limpopo Province.

On the Northern Limb, platinum-group metals mineralization is hosted primarily within the Platreef, a mineralized sequence that is traced more than 30 kilometres along strike. Ivanhoe's Platreef Project, within the Platreef's southern sector, is comprised of three contiguous properties: Turfspruit, Macalacaskop and Rietfontein. Turfspruit, the northernmost property, is contiguous with, and along strike from, Anglo Platinum's Mogalakwena group of mining operations and properties.

Since 2007, Ivanhoe has focused its exploration and development activities on defining and advancing the down-dip extension of its original discovery at Platreef, now known as the Flatreef Deposit, which is amenable to highly mechanized, underground mining methods. The Flatreef area lies entirely on the Turfspruit and Macalacaskop properties, which form part of the Company's mining right.

### ***Platreef Mineral Resources***

On May 11, 2016, Ivanhoe Mines announced a substantial increase in Indicated and Inferred Mineral Resources at the Platreef Project. The updated Mineral Resource estimate, which included updated UMT\_TCU Mineral Resources, Bikkuri Mineral Resources and the Mineral Resources in the immediate footwall of the TCU, was prepared by Ivanhoe Mines under the direction of Dr. Harry Parker, RM SME, of Amec Foster Wheeler E&C Services Inc. Dr. Parker and Timothy Kuhl, RM SME, also of Amec Foster Wheeler, have independently confirmed the Mineral Resource estimate and are the Qualified Persons for the estimate, which has an effective date of April 22, 2016.

The Flatreef Mineral Resource, with a strike length of 6.5 kilometres, lies predominantly within a flat-to-gently-dipping portion of the Platreef mineralized belt at relatively shallow depths of approximately 500 metres to 1,350 metres below the surface. The Flatreef Deposit is characterized by its very large vertical thicknesses of high-grade mineralization and a platinum-to-palladium ratio of approximately 1:1, which is significantly higher than other recent PGM discoveries on the Bushveld's Northern Limb.

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. The average thickness of the 2.0 g/t 3PE+gold grade shell used to constrain the T2MZ resources for the indicated area is 19 metres.

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. The average thickness of the 2.0 g/t 3PE+gold grade shell used to constrain the T2MZ resources for the inferred area is 12.7 metres.

### ***Health and safety at Platreef***

The Platreef Project reached a total of 7,121,029 million hours and 16,055 lost time injury (LTI) free hours worked in terms of the Mines Health and Safety Act and the Occupational Health and Safety Act of South Africa by the end of March 2017. Two medical treatment cases and two lost time accidents occurred during the first quarter of 2017. The Platreef Project continues to strive toward its workplace objective of an environment that causes zero harm to any employees, contractors, sub-contractors and consultants.

### ***Shaft 1 construction now in fast-sinking mode***

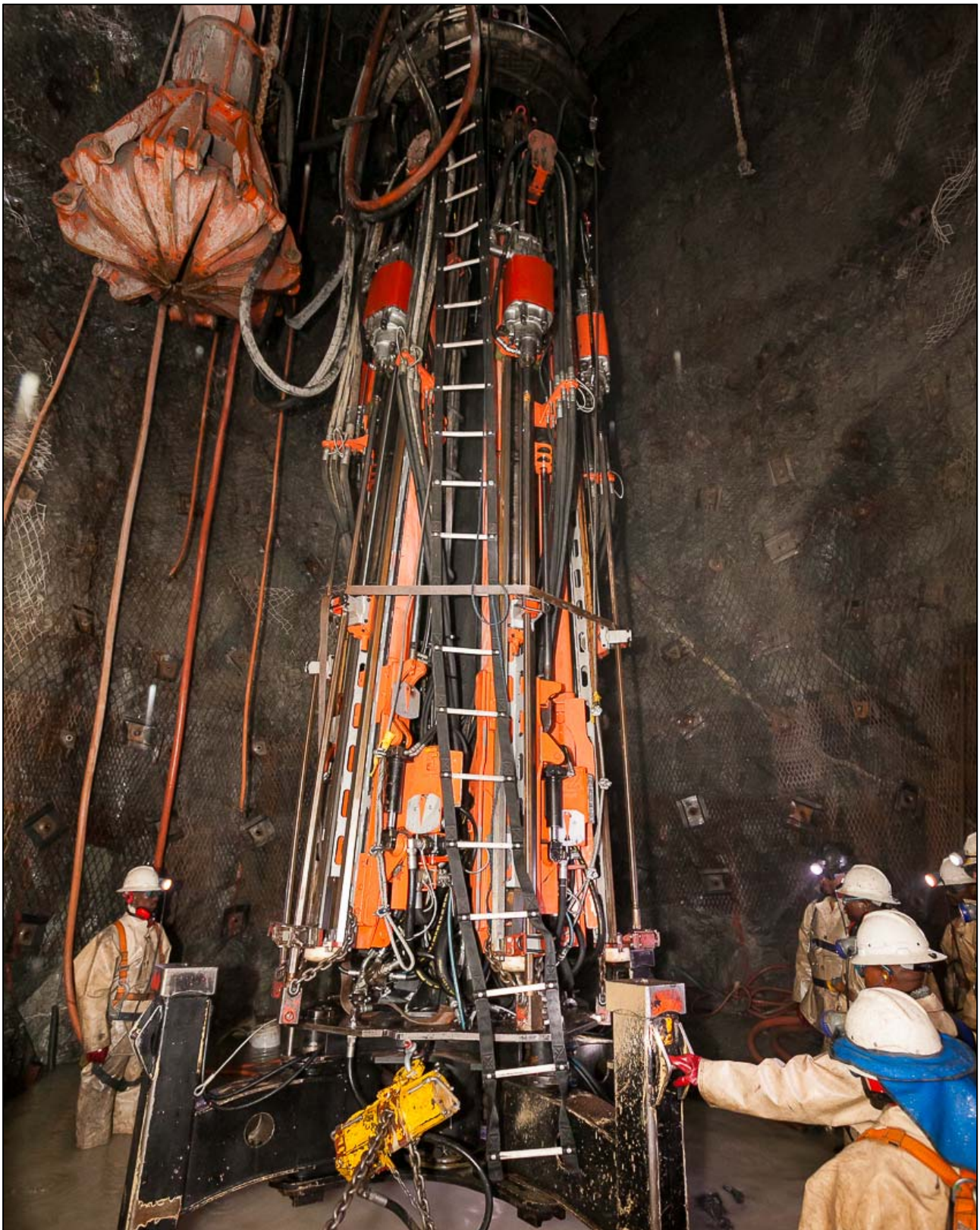
Shaft 1, with an internal diameter of 7.25 metres, will provide access to the Flatreef Deposit and enable the initial underground capital development to take place during the development of Shaft 2 and ultimately will become the primary ventilation intake shaft during the project's four-million-tonne-per-annum (Mtpa) production case. Following the successful commissioning of the stage and kibble winders and ancillary equipment, the permanent sinking phase started in July 2016. The initial sinking phase was completed to 107 metres below surface and the main sinking phase has been initiated. Shaft 1 had reached a depth of 346 metres below surface as of May 8, 2017.

**Figure 1: A Platreef engineer examining geotechnical features of the Shaft 1 sidewall.**





**Figure 2: Members of the Platreef sinking team underground in Shaft 1, which was at a depth of 346 metres below surface on May 8, 2017.**



An average sinking rate of 45 metres per month is expected during the main sinking phase. The shaft includes a 300-millimetre concrete lined shaft wall. The main sinking phase is expected to reach its projected, final depth of 980 metres below surface in 2018. 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.

### ***Shaft 2 early-works construction***

Shaft 2 will be located approximately 100 metres northeast of Shaft 1. Shaft 2, with an internal diameter of 10 metres, will be lined with concrete and sunk to a planned, final depth of more than 1,100 metres below surface. It will be equipped with two 40-tonne rock-hoisting skips with a capacity to hoist a total of six million tonnes of ore a year – which will be the single largest hoisting capacity at any mine in Africa. The headgear for the permanent hoisting facility was designed by South Africa-based Murray & Roberts Cementation.

The early works for Shaft 2 will 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 early works are planned to commence in Q2 2017 and will take approximately 12 months to complete.



**Figure 3: Illustration shows two perspectives of Shaft 2's 103-metre-tall concrete headgear, the hitch (foundation) and internal permanent hoisting facilities.**



### ***Platreef implementing a phased approach to a large, underground, mechanized mine***

Ivanhoe plans to develop the Platreef Mine in phases. The initial annual rate of four million tonnes per annum (Mtpa) is designed to establish an operating platform to support future expansions. This is expected to be followed by a potential doubling of production to 8 Mtpa; and then a third expansion phase to a steady-state 12 Mtpa, which would establish Platreef among the largest platinum-group-metals mines in the world.

Ivanhoe has made good progress on advancing the feasibility study of the first phase of development of the Platreef Mine. The study, which began in August 2015, is being prepared by principal consultant DRA Global, with specialized sub-consultants including Stantec Consulting, Murray & Roberts Cementation, SRK Consulting, Golder Associates and Digby Wells Environmental. The study is planned for completion in Q2 2017.

### ***Metallurgical testwork and processing***

Metallurgical testwork has focused on maximizing the recovery of platinum-group metals and base metals, also while producing an acceptably high-grade concentrate grade for sale to third parties. The three main geo-metallurgical units and composites have produced concentrate grades of approximately 85 to 110 g/t 3PE+gold at good PGE recoveries (86% to 88% 3PE+gold).

Comminution and flotation testwork has demonstrated that the optimum grind size of 80% passing 75 micrometres, in one stage of milling is sufficient to achieve the PGE recoveries referred to above. This simplifies the circuit and should enable Ivanhoe to optimize the capital and operating cost of the concentrator.

The flow sheet for phase one comprises a 4Mtpa, three-stage crushing circuit, which will feed into two parallel milling-flotation modules, each with a capacity of two million tonnes per year. Flotation is followed by a 4Mtpa tailings-handling and concentrate-thickening, filtration and storage circuit.

### ***Planned mining methods to incorporate highly productive, mechanized methods***

The selected mining areas in the current mine plan occur at depths ranging from approximately 700 metres to 1,200 metres below surface. The main access to the Platreef Deposit and ventilation system is expected to be through four vertical shafts: 1, 2, 3 and 4. Shaft 2 will host the main personnel transport cage, and the material and ore-handling system; shafts 1, 3 and 4 will provide ventilation to the underground workings. Shaft 1, now under development, also will be used for initial access to the deposit and early underground development.

The planned mining will incorporate low-cost, mechanized mining methods, including long-hole stoping and drift-and-fill mining. Mined-out areas will be backfilled with a mixture of tailings from the processing plant and cement. The ore will be hauled from the stopes to a series of ore passes that will connect to a main haulage level at Shaft 2, from where it will be hoisted to the surface for processing.

### ***Bulk water and electricity supply***

The Olifants River Water Resource Development Project (ORWRDP) is designed to deliver water to the Eastern and Northern limbs of South Africa's Bushveld Complex. The project consists of the new De Hoop Dam, the raised wall of the Flag Boshielo Dam and related pipeline infrastructure that ultimately is expected to deliver water to Pruissen, southeast of the Northern Limb. The Pruissen Pipeline Project is expected to be developed to deliver water onward from Pruissen to the municipalities, communities and mining projects on the Northern Limb. Ivanhoe is a member of the ORWRDP's Joint Water Forum.

The Platreef Project's water requirement for the first phase of development is projected to peak at approximately 10 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.

The Platreef Project's electricity requirement for a 4Mtpa underground mine, concentrator and associated infrastructure has been estimated at approximately 100 million volt-amperes. An agreement has been reached with Eskom, the South African public electricity utility, for the supply of phase-one power. Ivanhoe chose a self-build option for permanent power that will enable Ivanhoe to manage the construction of the distribution lines from Eskom's Burutho sub-station to the Platreef Mine. The self-build and electrical supply agreements are being formulated.

### ***First phase of the relocation of informal graves completed; second phase underway***

On February 2, 2017, a South African judge issued a ruling in favour of Ivanplats clearing the way for the Company to proceed with the relocation of informal graves in the vicinity of its Platreef Mine development project.

A total of 75 informal graves were successfully relocated from land outside the perimeter of the active mine development site to new burial plots in a formal cemetery. An additional 19 locations were investigated and found not to contain human remains. The Ivanplats support program included assistance in providing new burial plots in a formal cemetery, tombstones and related services.

Ivanplats plans to relocate an estimated 27 additional informal graves as part of the second phase of its relocation program after the permits for the exhumations and reburials have been received. Further phases on peripheral infrastructure areas also are planned. The relocation of remaining informal graves will not impact the development of the Platreef Project.

### ***Development of human resources and job skills***

Work is progressing well on the implementation of Ivanhoe's Social and Labour Plan (SLP), to which the Company has pledged a total of R160 million (\$11 million) during the first five years, culminating in November 2019. The approved plan includes R67 million (\$4 million) for the development of job skills among local residents and R88 million (\$6 million) for local economic development projects. Additional internal training is ongoing to upskill the current work force.

## **KIPUSHI PROJECT**

The Kipushi copper-zinc-germanium-lead mine in the DRC, is adjacent to the town of Kipushi and approximately 30 kilometres southwest of Lubumbashi. It is located on the Central African Copperbelt, approximately 250 kilometres southeast of the Kamoa-Kakula Project and less than one kilometre from the Zambian border. Ivanhoe acquired its 68% interest in the Kipushi Project in November 2011; the balance of 32% is held by the state-owned mining company, La Générale des Carrières et des Mines (Gécamines).

### ***Health, safety and community development***

The Kipushi Project achieved a total of 5,321,941 work hours free of lost-time injuries, equivalent to 1,694 days, to the end of Q1 2017. Malaria remains the most frequently occurring health concern at Kipushi which increased after the rainy season to an average of 26 cases per month over the quarter.

In an effort to reduce the incidence of malaria in the Kipushi community, a Water Sanitation and Health (WASH) program has been initiated in cooperation with the Territorial Administrator and the local community. The main emphasis of the program's first phase is cleaning storm drains in the municipality to prevent accumulations of ponded water, where malarial mosquitos breed.

The Fionet program to improve malaria diagnostics and treatment expanded to 300 Deki readers installed in 252 medical service providers in Haut-Katanga and Lualaba provinces in Southern DRC, which host Ivanhoe's Kipushi and Kamoa-Kakula Projects. Deki readers provide automated readings of rapid diagnostic tests to remove the human-error factor and avoid prescription of unnecessary medication. The data is uploaded to a cloud server for analysis by the Ministry of Health in planning malaria-control measures. There were more than 40,000 patient encounters where Deki readers provided diagnostic testing during the past year, with only approximately 48% of Kipushi Project employees who were symptomatic testing positive for malaria.

At the request of the Kipushi municipal authority, and in conjunction with the Haut Katanga Office of Roads and Drainage (Office des Voies et Drainage) and La Commission Nationale de Prévention Routière (CNPR), speed bumps and signs have been installed on tarmac roads in the municipal areas in an effort to reduce speeding and reduce traffic accidents.

### ***Kipushi Mineral Resources***

Ivanhoe announced a Mineral Resource estimate for Kipushi on January 27, 2016. The estimate was prepared by MSA Group of Johannesburg in accordance with the 2014 CIM definition standards, incorporated by reference into Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

Zinc-rich Measured and Indicated Mineral Resources total 10.18 million tonnes at 34.89% zinc, 0.65% copper, 0.96% lead, 19 g/t silver, 15ppm cobalt and 51 g/t Germanium at a 7% zinc cut-off, containing 7,833 million pounds of zinc. Zinc-rich Inferred Mineral Resources total 1.87 million tonnes at 28.24% zinc, 1.18% copper, 0.88% lead, 10 g/t silver, 15ppm cobalt and 53 g/t germanium at a 7% zinc cut-off containing 1,169 million pounds of zinc.

Copper-rich Measured and Indicated Mineral Resources total an additional 1.63 million tonnes at grades of 4.01% copper, 2.87% zinc and 22 g/t silver, at a 1.5% copper cut-off, containing 144 million pounds of copper. Copper-rich Inferred Mineral Resources total an additional 1.64 million tonnes at grades of 3.30% copper, 6.97% zinc and 19 g/t silver at a 1.5% copper cut-off, containing 119 million pounds of copper.



### ***Project development and infrastructure***

The Kipushi Mine, which had been placed on care and maintenance in 1993, flooded in early 2011 due to a lack of pump maintenance over an extended period. At its peak, water reached 851 metres below the surface. Ivanhoe restored access to the mine's principal haulage level at 1,150 metres below surface in December 2013; since then, crews have been upgrading underground infrastructure to permanently stabilize the water levels.

Since completion of the drilling program, water levels have been lowered to the bottom of Shaft 5, which is planned to be the mine's main production shaft. The shaft is eight metres in diameter, 1,240 metres deep and approximately 1.5 kilometres from the planned main mining area. It provides the primary access to the lower levels of the mine, including the Big Zinc Deposit, through the 1,150-metre haulage level and underground ramp decline.

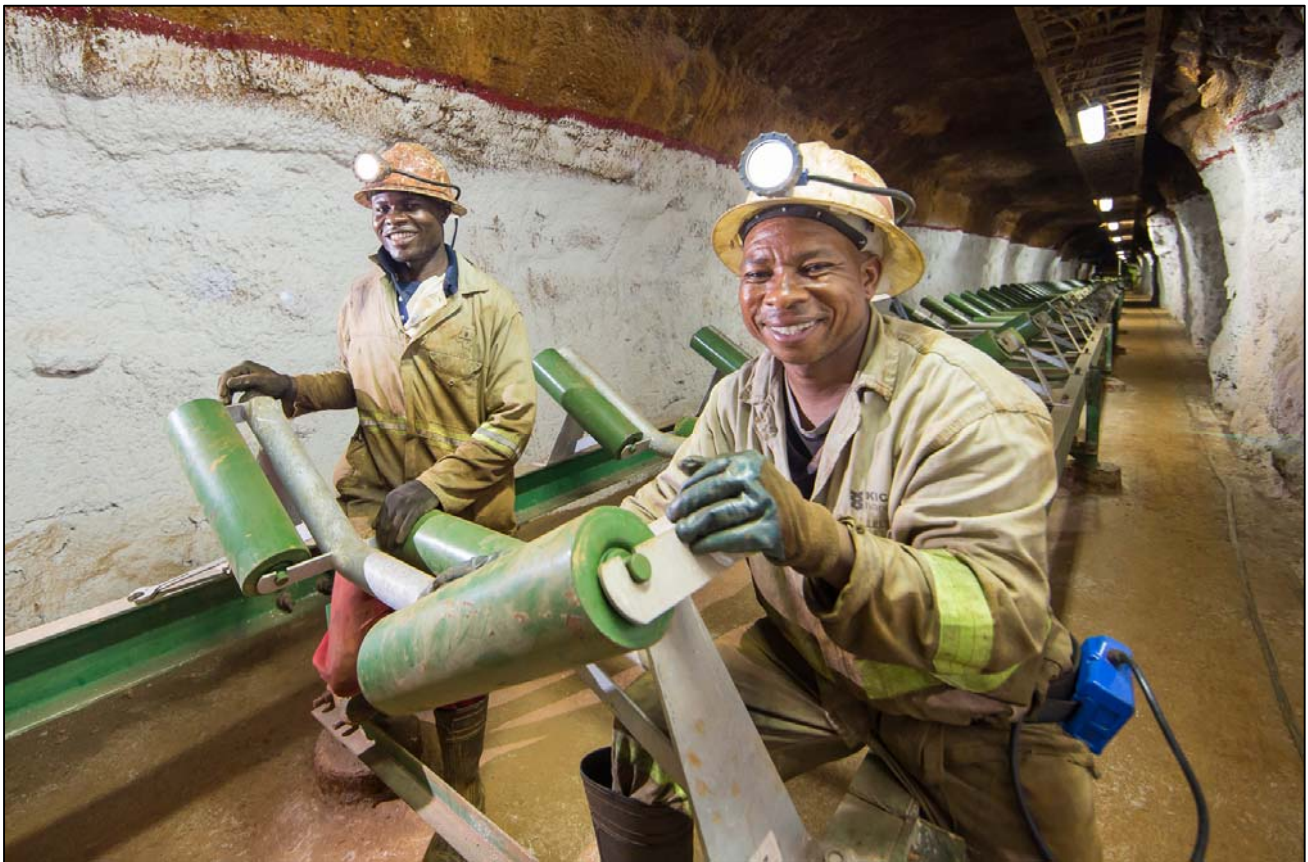
Engineering work has focused on the upgrading of Shaft 5 conveyances and infrastructure, installation of the rock conveyor system, the stripping and evaluation of the underground jaw crusher, refurbishment of bearer sets on the main rising water pipes, and the replacement of shaft buntons (struts that reinforce the shaft walls). A new twinned high-volume ventilation fan also has been installed and is being commissioned on surface at Shaft 4 to provide fresh air to the underground workings.

**Figure 4: Shaft 5 main pumping station at the 1,200-metre level.**





**Figure 5: New rollers being installed on the 1,150-metre-level ore conveyor belt as part of the infrastructure upgrading program.**



### ***Pre-feasibility study underway at Kipushi***

In September 2016, Ivanhoe began a pre-feasibility study (PFS) on the Kipushi Project that will further refine the optimal development scenario for the existing underground mine at Kipushi. Orewin, of Australia, has been appointed the main engineering firm for the preparation of the PFS. Golder Associates, MDM, SRK, DRA, Murray & Roberts and Grindrod also have been engaged to complete various aspects of the study.

The PFS will refine the positive preliminary economic assessment (PEA) for the redevelopment of the Kipushi Project that was announced on May 2, 2016. The PEA was prepared in compliance with Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

Highlights of the 2016 PEA, prepared by OreWin and the MSA Group (Pty) Ltd, of Johannesburg, South Africa, include:

- After-tax net present value at an 8% real discount rate is \$533 million.
- After-tax real internal rate of return is 30.9%.
- After-tax project payback period is 2.2 years.

- Leveraging existing surface and underground infrastructure significantly lowers the redevelopment capital compared to a greenfield development project, as well as the time required to reinstate production.
- Life-of-mine average planned zinc concentrate production of 530,000 dry tonnes per annum – with a concentrate grade of 53% zinc – is expected to rank Kipushi, once in production, among the world's major zinc mines.
- Life-of-mine average cash cost of \$0.54/lb. of zinc is expected to rank Kipushi, once in production, in the bottom quartile of the cash-cost curve for zinc producers globally.

**Figure 6: Upgraded supports for Shaft 5 pump columns at the 1,200-metre-level pump station.**



Preparations are underway to start a 6,500-metre drilling program at Kipushi. The planned program, which is expected to begin later this month, will include six metallurgical holes and additional resource drilling in the Fault Zone and the Nord Riche and Southern Zinc zones to upgrade inferred resources to indicated resources.



## **KAMOA-KAKULA COPPER PROJECT**

The Kamoa-Kakula Copper Project, a joint venture between Ivanhoe Mines and Zijin Mining, has been independently ranked as the largest copper discovery ever made on the African continent, with adjacent prospective exploration areas within the Central African Copperbelt in the DRC, approximately 25 kilometres west of the town of Kolwezi and about 270 kilometres west of Lubumbashi.

Ivanhoe sold a 49.5% share interest in Kamoa Holding Limited to Zijin Mining in December 2015 for an aggregate consideration of \$412 million. In addition, Ivanhoe sold a 1% share interest in Kamoa Holding to privately-owned Crystal River Global Limited for \$8.32 million – which Crystal River will pay through a non-interest-bearing, 10-year promissory note. Since the conclusion of the Zijin transaction in December 2015, each shareholder of Kamoa Holding has been required to fund expenditures at the Kamoa-Kakula Project in an amount equivalent to its proportionate shareholding interest in the company.

A 5%, non-dilutable interest in the Kamoa-Kakula Project was transferred to the DRC government on September 11, 2012, for no consideration, pursuant to the DRC Mining Code. Following the signing of an agreement with the DRC government in November 2016, in which an additional 15% interest in the Kamoa-Kakula Project was transferred to the DRC government, Ivanhoe and Zijin Mining now each hold an indirect 39.6% interest in the Kamoa-Kakula Project, Crystal River Global Limited holds an indirect 0.8% interest and the DRC government holds a direct 20% interest. Kamoa Holding Limited continues to hold an 80% interest in the project.

### ***Kamoa-Kakula Mineral Resources***

Ivanhoe issued an updated Mineral Resource for the Kamoa-Kakula Project on October 12, 2016. The updated Mineral Resource included the initial Kakula Mineral Resource estimate, prepared by Ivanhoe Mines under the direction of Amec Foster Wheeler E&C Services Inc., of Reno, USA, in accordance with the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves. The Qualified Persons for the Kamoa-Kakula Mineral Resource estimate are Dr. Harry Parker, RM, SME and Gordon Seibel, RM, SME both of Amec Foster Wheeler E&C Services Inc.

The combined Kamoa-Kakula Project's Indicated Mineral Resources now total 944 million tonnes grading 2.83% copper, containing 58.9 billion pounds of copper at a 1.0% copper cut-off grade and a minimum thickness of three metres. Kamoa-Kakula now also has Inferred Mineral Resources of 286 million tonnes grading 2.31% copper and containing 14.6 billion pounds of copper, also at a 1.0% copper cut-off grade and a minimum thickness of three metres.

The Kakula Indicated Mineral Resources total 192 million tonnes at a grade of 3.45% copper, containing 14.6 billion pounds of copper at a 1% copper cut-off. At a 2% copper cut-off, Indicated Resources total 115 million tonnes at a 4.80% copper grade, containing 12.1 billion pounds of copper. At a higher cut-off of 3% copper, Indicated Resources total 66 million tonnes at a grade of 6.59% copper, containing 9.6 billion pounds of copper. Kakula has Inferred Mineral Resources totalling 101 million tonnes at a grade of 2.74% copper, containing 6.1 billion pounds of copper at a 1% copper cut-off. At a 2% copper cut-off, Inferred Resources total 51 million tonnes at a 3.92% copper grade, containing 4.4 billion pounds of copper. At a higher cut-off of 3% copper, Inferred Resources total 27 million tonnes at a grade of 5.26% copper, containing 3.2 billion pounds of copper. Kakula's Indicated and Inferred resources are included in the combined Kamoa-Kakula Project mineral resources.

The average true thickness of the Kakula selective mineralized zone (SMZ) at a 1% cut-off is 14.27 metres in the Indicated Resources area and 10.33 metres in the Inferred Resources area. At a higher 3% cut-off, the average true thickness of the SMZ is 5.91 metres in the Indicated Resources area and 5.15 metres in the Inferred Resources area.

### ***Kakula West Discovery confirmed by assay results and additional follow-up drilling***

On March 21, 2017, Ivanhoe announced that a new step-out hole, DD1124 – drilled 5.4 kilometres west of the present boundary of Kakula’s current Inferred Resources – intersected a relatively shallow, 16.3-metre zone of typical Kakula-style, chalcocite-rich copper mineralization similar to holes drilled in the centre of the high-grade Kakula Deposit on the Kamoia-Kakula Copper Project. The new discovery, now referred to as Kakula West extended the length of the Kakula mineralized trend to approximately 10.1 kilometres, essentially doubling the previously estimated strike length of 5.5 kilometres contained in Ivanhoe’s January 23, 2017 news release.

On April 10, 2017, Ivanhoe announced the assay results for DD1124 that confirmed significant high grade mineralization. DD1124 intersected 8.86 metres (true width) of 5.83% copper at a 3.0% copper cut-off, beginning at a downhole depth of 428.70 metres; 8.86 metres (true width) of 5.83% copper at a 2.5% copper cut-off; 16.05 metres (true width) of 4.14% copper at a 2.0% copper cut-off; and 16.05 metres (true width) of 4.14% copper at a 1.0% copper cut-off. DD1124’s best six-metre intercept was 6.17 metres (true width) at 6.84% copper.

**Figure 7: Drilling at Kakula West.**



In addition to DD1124, additional follow up drilling confirmed the significance of the initial discovery with two western step-out holes.

- DD1138, drilled 400 metres west of DD1124, intersected a zone of moderate-to-strong chalcocite mineralization six to seven metres thick, beginning at a downhole depth of 565.5 metres. Mineralization is hosted in a laminated siltstone horizon, typical of Kakula-style mineralization seen elsewhere at Kakula. The siltstone was separated from the Roan footwall sandstone by a sandy diamictite unit.
- DD1144, drilled 800 metres west of DD1224, intersected similar geology and mineralization to DD1138 with approximately ten metres of moderate chalcocite mineralization, including more strongly mineralized zones starting at a downhole depth of 502 metres and hosted in a laminated siltstone unit.

Full details of the DD1138 and DD1144 intersections can be found in the April 10, 2017 news release.

Excellent visual drill intercepts continue to be returned at Kakula West. The results show a rapidly growing area of shallow copper mineralization characterized by finely disseminated chalcocite in siltstone and maroon diamictite. The style and the overall geometry of mineralization are typical of the high-grade Kakula trend to the east.

The Kakula Discovery remains open along a westerly-southeasterly strike. Importantly, the chalcocite-rich zone of mineralization in DD1124 was intersected at a depth of approximately 400 metres below surface, significantly shallower than several of the mineralized intercepts announced in January 2017 that were drilled closer to the western boundary of the Kakula Inferred Resource

**Figure 8: Exploration staff processing Kakula drill core at the Kamoia camp facility.**



### ***Kamoia-Kakula studies***

The Kamoia-Kakula Project has started a PEA for larger production cases at both Kamoia and Kakula. The Kakula study will be based on an updated Mineral Resource Estimate expected in May 2017. It is anticipated that the increased resource base will support a Kakula mine capacity of approximately 6Mtpa. The Kansoko mine capacity also is expected to be increased to 6Mtpa through a change in mining method. The revised PEA targets peak mine production of approximately 12Mtpa from the current resource base at the presently delineated Kamoia and Kakula deposits. In light of the successful step-out drilling at Kakula West, the Kamoia-Kakula development plans will be reassessed and amended on a continuous basis as the project moves forward.

The updated PEA is expected to be complete during Q3 2017.



### ***Health and safety at Kamoa-Kakula***

Health and safety remain key priorities for all people working at the Kamoa-Kakula Project. As of March 31, 2017, the Kamoa-Kakula project had achieved 6,394,834 lost-time injury free man hours.

During Q1 2017, 58 cases of malaria were diagnosed at the Kamoa clinic, compared to 85 for the same period in 2016. This progress is, in part, due to the project's malaria control plan.

### ***Environmental, Social and Health Impact Assessment***

A major update to the Kamoa Environmental, Social & Health Impact Assessment (ESHIA) was submitted to DEPM (DRC environmental authority) on January 30, 2017, before the required 5-year anniversary of the approved 2012 ESHIA. The scope of the updated ESHIA included the Kansoko Mine and concentrator, Kakula Mine and concentrator, Kakula tailings storage facility and main Kolwezi access road. Approval for the updated ESHIA was received from the DEPM on March 3, 2017.

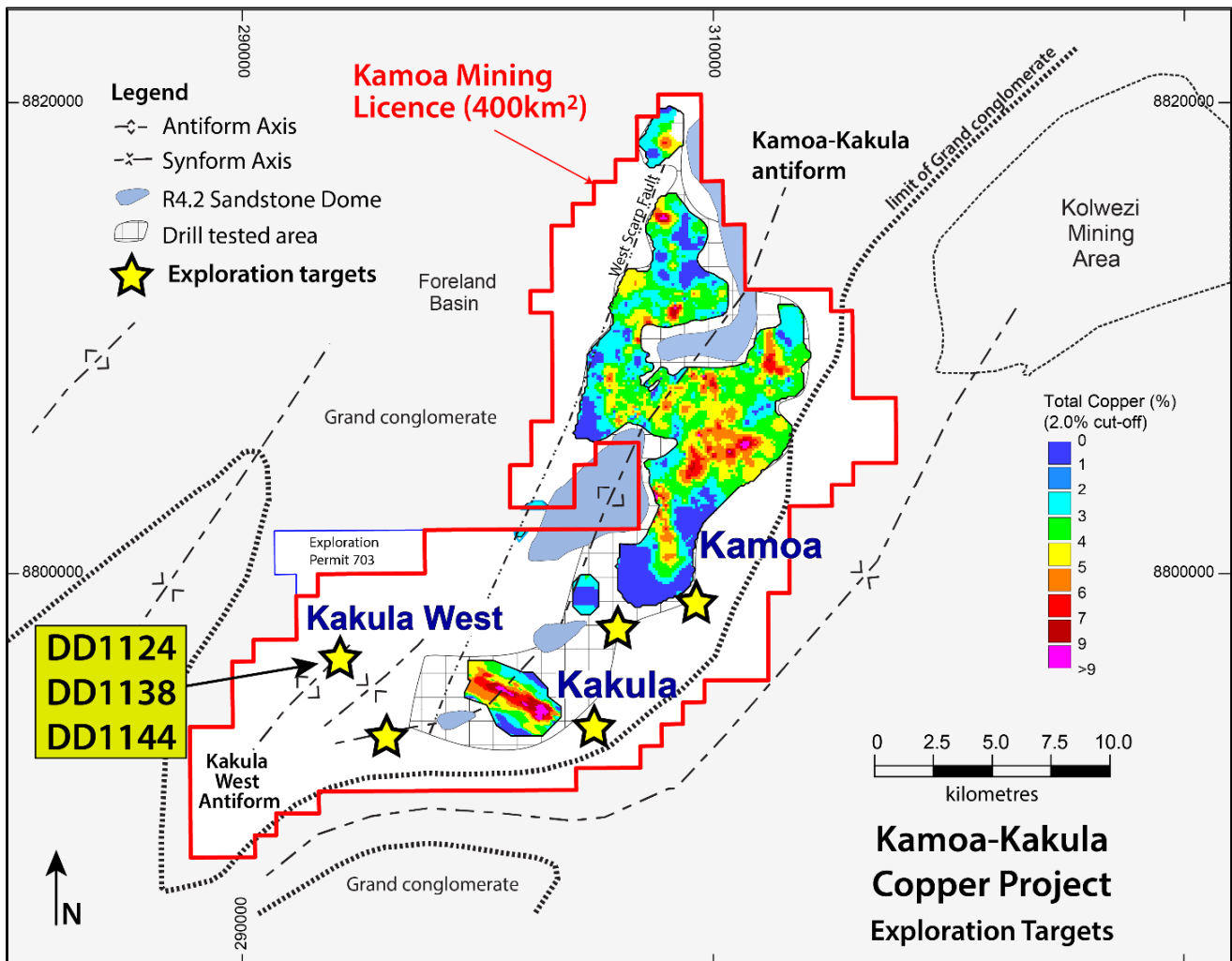
### ***Ongoing exploration activities***

As of the end of Q1 2017, more than 25,000 metres had been drilled at Kakula since the start of the year. There are 14 rigs on site, 12 of which are currently drilling; 10 from the contractor and two project owned rigs. Included in the drilling total were holes drilled for geotechnical and metallurgical studies.

Exploration activities significantly increased in Q1 2017. The accelerated exploration program was driven by resource expansion drilling to support an updated Mineral Resource Estimate planned for early Q2 2017 to be used for future development studies on the project. Nine of the 14 rigs on site were dedicated to resource expansion at Kakula. Coinciding with this expansion drilling, exploration activities were increased on untested parts of the Kamoa-Kakula licence. The Kakula West discovery was a result of the expanded grass roots program with three rigs currently dedicated to this area.

With the onset of the dry season, the intention is to reallocate a number of rigs from Kakula resource expansion and development activities to test other areas on the Kamoa-Kakula licence where significant Kakula-style targets have been identified but have been inaccessible during the wet season.

**Figure 9: Kamoa-Kakula mining licence – showing copper grade of Indicated and Inferred Resources at a 2% copper cut-off, untested areas, current target areas and location of Kakula West Discovery.**



***Improved copper recoveries and concentrate grades confirmed by preliminary metallurgical tests on drill core from Kakula***

Following on from the positive preliminary testwork results received during Q4 2016 of 87.8% recovery at an extremely high concentrate grade of 56% copper, the next phase of flowsheet development has been initiated.

A metallurgical drilling campaign to compile a representative composite sample is underway and is planned to be completed during Q3 2017. This sample will be used for the PFS circuit development and optimization testwork which is planned for the second half of 2017.

Earlier metallurgical testwork indicated that the Kamoa and Kakula concentrates contain extremely low arsenic levels by world standards – approximately 0.02%. Given this critical competitive marketing advantage, Kamoa-Kakula concentrates are expected to attract a significant premium from copper-concentrate traders for use in blending with concentrates from other mines. The concentrates will help to enable the other concentrates to meet the limit of 0.5% arsenic imposed by Chinese smelters to meet China's environmental restrictions.

### ***Mine development at the Kansoko Mine expected to reach high-grade copper in Q2***

Byrncut Underground Congo SARL progressed well with the decline development at Kansoko Sud during Q1 2017. A total of more than 1,600 metres of development had been achieved at the end of Q1 2017.

The service and conveyor declines each have been advanced more than 770 metres and are in Kamoia pyritic siltstone, which overlies the copper ore. Development of the underground mine is scheduled to reach the high-grade copper mineralization at the Kansoko Sud Deposit during Q2 2017.

**Figure 10: Operating the underground drill rig during decline development.**



### ***Kakula box-cut and decline development***

The Kamoia-Kakula technical team has identified a location for a box-cut for the initial portal to planned decline ramps that will provide underground access to the Kakula Deposit. The design of the box-cut has been completed and the excavation, support and civil works have been tendered. A preferred bidder has been identified and the project team is in a position to award the contract. Construction of the Kakula box-cut is expected to take approximately five months, after which development of the set of twin declines can commence.

A tender document for the Kakula decline development has been completed and will be issued to prospective contractors during Q2 2017.

### ***Kamoia mine site connected to the national hydroelectric grid***

The construction of the 120 kilovolt (kV) power line that branches off from the main supply at Kisenge has been completed. A 120kV mobile substation was installed, commissioned and energized on October 30, 2016. The Kamoia mine site now is connected to the national electrical grid and is receiving hydropower for work on site.

An eight-kilometre, 11kV overhead power line with mini substations has been constructed from the mine site to the Kamoa camp and is supplying hydropower to the camp. The supply of electricity from the grid has resulted in significant savings from reduced use of diesel fuel.

The design of a 120kV line connecting the Kansoko mine site with Kakula has been designed and tenders from potential contractors have been received.

### ***Initial repair work enables Mwadingusha power station to supply electricity to grid***

The Mwadingusha Unit 1 repair work was completed in August 2016 and the official inauguration ceremony was held at the Mwadingusha power station on September 7, 2016. The Mwadingusha G1 unit, supplying 11 megawatts, was synchronized to the SNEL, the DRC's state-owned power company, national interconnected grid on September 6, 2016.

The contract to purchase four turbines for the Mwadingusha power plant upgrades was awarded and the contract signed between SNEL and the consortium Andritz Hydro & Cegelec Corporation. A site visit by the consortium took place in December in preparation for demolition work to start in August 2017.

### ***Continued focus on community and sustainability***

The number of unskilled job opportunities from the Kamoa-Kakula Project and contractors has risen during Q1 2017 due to the increase in activity around the camp and mine area. Preference is given to local job-seekers and numerous positions have been filled.

The Sustainable Livelihoods project is largely aimed at economically empowering communities in the vicinity of the planned mine. The project, which has been in place for the past five years, continues to successfully manage the following programs during Q1 2017:

- a small-holder maize (corn) production program yielded maize from local communities as well as the mine's farm;
- a vegetable program supplying produce to the Kamoa-Kakula Project camp kitchen;
- a poultry project that supplies the Kamoa-Kakula Project camp kitchen with chickens and eggs;
- a beekeeping program managing over 50 honey-producing hives; and
- a fish-farming program consisting of two fully stocked dams.

## SELECTED QUARTERLY FINANCIAL INFORMATION

The following table summarizes selected financial information for the prior eight quarters. Ivanhoe had no operating revenue in any financial reporting period and did not declare or pay any dividend or distribution in any financial reporting period.

	3 Months ended			
	March 31,	December 31,	September 30,	June 30,
	2017	2016	2016	2016
	\$'000	\$'000	\$'000	\$'000
Exploration and project expenditure	8,296	9,507	7,769	8,233
General administrative expenditure	4,953	7,272	4,213	3,657
Share-based payments	1,372	1,442	1,750	1,312
Finance income	(6,429)	(6,827)	(7,239)	(7,367)
Finance costs	479	471	454	445
Total comprehensive loss (profit) attributable to:				
Owners of the Company	1,749	14,101	(1,860)	6,568
Non-controlling interest	3,273	3,914	2,445	3,483
Loss per share (basic and diluted)	0.01	0.02	0.01	0.01

	3 Months ended			
	March 31,	December 31,	September 30,	June 30,
	2016	2015	2015	2015
	\$'000	\$'000	\$'000	\$'000
Exploration and project expenditure *	6,917	10,271	8,553	9,009
General administrative expenditure *	3,693	5,833	4,430	1,323
Share-based payments	1,473	2,345	1,655	1,736
Gain on partial sale of subsidiary	-	(357,671)	-	-
Re-measurement to fair value of the interest retained in joint venture	-	(376,148)	-	-
Finance income	(8,469)	(1,191)	(273)	(445)
Finance costs	428	1,556	36	48
Mark-to-market gain on revaluation of warrants	-	(429)	(970)	(1,334)
Loss (gain) from subsidiary held for partial sale	-	755	(7,958)	2,675
Total comprehensive loss (profit) attributable to:				
Owners of the Company	4,203	(717,213)	9,420	11,008
Non-controlling interest	2,897	2,468	3,439	3,564
(Profit) loss per share (basic and diluted)	0.01	(0.93)	0.00	0.01

\* Prior period amounts have been amended to show the (gains)/losses from subsidiary held for partial sale separately in order to improve comparability.



## DISCUSSION OF RESULTS OF OPERATIONS

### *Review of the three months ended March 31, 2017 vs. March 31, 2016*

The Company's total comprehensive loss for Q1 2017 of \$5.0 million was \$2.1 million lower than for the same period in 2016 (\$7.1 million). The decrease mainly was due to a \$5.3 million increase in exchange gains on translation of foreign operations, that was partly offset by a \$2.0 million decrease in finance income.

The decrease in finance income was due to the decrease in the deemed finance income on the purchase price receivable from the partial sale of the Kamoia Project from \$4.3 million in Q1 2016 to \$1.1 million for the same period in 2017, which coincides with the decrease in the purchase price receivable.

Exploration and project expenditures for the three months ending March 31, 2017, amounted to \$8.3 million and were \$1.4 million more than for the same period in 2016 (\$6.9 million).

With the focus at the Platreef Project on development and the Kamoia Project being accounted for as a joint venture, \$8.2 million of the total \$8.3 million exploration and project expenditure related to the Kipushi Project. Expenditure at the Kipushi Project increased by \$1.5 million compared to the same period in 2016. The main classes of expenditure at the Kipushi Project in Q1 2017 and Q1 2016 are set out in the following table:

	<b>Three months ended March 31, 2017 \$'000</b>	<b>Three months ended March 31, 2016 \$'000</b>
<b>Kipushi Project</b>		
Salaries and benefits	2,711	2,668
Electricity	1,359	1,106
Studies and contracting work	1,064	165
Depreciation	869	760
Repair and maintenance	809	483
Site security and safety	172	138
Other expenditure	1,187	1,364
<b>Total project expenditure</b>	<b>8,171</b>	<b>6,684</b>

The Company's share of losses from the Kamoia Holding joint venture increased from \$4.2 million in Q1 2016 to \$5.5 million in Q1 2017. The following table summarizes the Company's share of the comprehensive loss of Kamoia Holding for the three months ending March 31, 2017 and for the same period in 2016:

	Three months ended March 31, 2017	Three months ended March 31, 2016
	\$'000	\$'000
Interest expense	9,183	7,064
Interest income	(292)	-
Exploration costs	5,415	1,684
Foreign exchange (gain) loss	(102)	189
Loss for the period	14,204	8,937
Loss attributable to non-controlling interest	(3,056)	(419)
Loss for the period attributable to joint venture partners	11,148	8,518
Company's share of losses from joint venture (49.5%)	5,518	4,216

The costs associated with mine development are capitalized as development costs in Kamoia Holding, while the exploration expenditure at Kakula is expensed. The interest expense in the Kamoia Holding joint venture relates to shareholder loans where each shareholder is required to fund Kamoia Holding in an amount equivalent to its proportionate shareholding interest.

#### *Financial position as at March 31, 2017 vs. December 31, 2016*

The Company's total assets decreased by \$3.1 million, from 1,002.2 million as at December 31, 2016, to \$999.1 million as at March 31, 2017. This resulted from the Company utilizing its cash resources in its operations. The Company's total liabilities decreased by \$2.7 million to \$43.3 million as at December 31, 2017, from \$46.0 million as at December 31, 2016.

The remaining purchase price receivable due to the Company as a result of the sale of 49.5% of Kamoia Holding decreased as the Company received \$41.2 million from Zijin on February 8, 2017. The present value of the remaining consideration receivable, net of transaction costs, was \$38.4 million as at March 31, 2017 and is due on May 23, 2017.

The Company's investment in the Kamoia Holding joint venture increased by \$12.5 million from \$473.6 as at December 31, 2016, to \$486.2 million as at December 31, 2017, with the current shareholders funding the operations equivalent to their proportionate shareholding interest. The Company's portion of the Kamoia Holding joint venture cash calls amounted to \$13.5 million during Q1 2017, while the Company's share of comprehensive loss from joint venture amounted to \$5.5 million. At Kamoia-Kakula, the focus remained on development, together with an exploration program at the Kakula Discovery.

Property, plant and equipment increased by \$13.5 million, with a total of \$9.7 million being spent on project development and to acquire other property, plant and equipment, \$9.0 million of which pertained to development costs of the Platreef Project.

The Company utilized \$12.2 million of its cash resources in its operations and earned interest income of \$0.8 million in Q1 2017.

## LIQUIDITY AND CAPITAL RESOURCES

The Company had \$291.2 million in cash and cash equivalents as at March 31, 2017. Certain of the Company's cash and cash equivalents, having an aggregate value of \$10.7 million, are subject to contractual restrictions as to their use and are reserved for the Platreef Project.

As at March 31, 2017, the Company had consolidated working capital of approximately \$338.0 million, compared to \$364.8 million at December 31, 2016. The Platreef Project working capital is restricted and amounted to \$5.6 million at March 31, 2017, and \$14.8 million at December 31, 2016. Excluding the Platreef Project working capital, the resultant working capital was \$332.4 million at March 31, 2017, and \$350.0 million at December 31, 2016. The Company believes it has sufficient resources to cover its short-term cash requirements. However, the Company's access to financing always is uncertain and there can be no assurance that additional funding will be available to the Company in the near future.

On December 8, 2015, Zijin, through a subsidiary company, acquired a 49.5% interest in Kamoa Holding for a total of \$412 million in a series of payments. Ivanhoe received an initial \$206 million from Zijin on December 8, 2015, and a further \$41.2 million on each of March 23, 2016, July 8, 2016, October 25, 2016, and February 8, 2017; the last remaining \$41.2 million is scheduled to be received on May 23, 2017. Since December 8, 2015, each shareholder in Kamoa Holding has been required to fund Kamoa Holding in an amount equivalent to its proportionate shareholding interest.

The Company's main objectives for 2017 at the Platreef Project are the completion of the phase one feasibility study, the continuation of Shaft 1 construction and commencement of construction of Shaft 2. At Kipushi, the principal objective is the completion of the PFS and continued upgrading of mining infrastructure. At the Kamoa-Kakula Project, priorities are the continuation of drilling, the continuation of construction of the twin declines at Kamoa and the commencement of a box-cut at Kakula. The Company expects to spend \$50 million on further development at the Platreef Project; \$26 million at the Kipushi Project; \$4 million on regional exploration in the DRC; and \$11 million on corporate overheads for the remainder of 2017 – as well as its proportionate funding of the Kamoa-Kakula Project, expected to be \$35 million for the remainder of 2017.

The Company has a three-year mortgage bond and a five-year mortgage bond outstanding on its offices in London, United Kingdom, of £2.4 million (\$2.9 million) and £0.9 million (\$1.1 million) respectively. The first is fully repayable on June 30, 2020, secured by the property and incurs interest at a rate of LIBOR plus 2.25% payable monthly in arrears, with the latter also secured by the property, incurring interest at a rate of LIBOR plus 2.5% payable monthly in arrears. During the first three years, from June 2014 until May 2017, only interest will be payable.

In 2013, the Company became party to a loan payable to ITC Platinum Development Limited, which had a carrying value of \$23.4 million as at March 31, 2017, and a contractual amount due of \$30.5 million. The loan is repayable once the Platreef Project has residual cashflow, which is defined in the loan agreement as gross revenue generated by the Platreef Project, less all operating costs attributable thereto, including all mining development and operating costs. The loan attracts interest of LIBOR plus 2% calculated monthly in arrears. Interest is not capitalized. The difference of \$7.1 million between the contractual amount due and the fair value of the loan is the benefit derived from the low-interest loan.

The Company has an implied commitment in terms of spending on work programs submitted to regulatory bodies to maintain the good standing of exploration and exploitation permits at its mineral properties. The following table sets forth the Company's long-term obligations:

<b>Contractual Obligations as at March 31, 2017</b>	<b>Payments Due By Period</b>				
	<b>Total</b>	<b>Less than 1 year</b>	<b>1-3 years</b>	<b>4-5 years</b>	<b>After 5 years</b>
	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
Debt	34,477	-	854	3,158	30,465
Operating leases	2,168	439	987	742	-
Shaft 1 construction – Platreef Project	6,457	6,457	-	-	-
<b>Total contractual obligations</b>	<b>43,102</b>	<b>6,896</b>	<b>1,841</b>	<b>3,900</b>	<b>30,465</b>

Debt in the above table represents the mortgage bonds owing to Citibank and loan payable to ITC Platinum Development Limited, as described above.

The Company is required to fund its Kamoia Holding joint venture in an amount equivalent to its proportionate shareholding interest.

#### **OFF-BALANCE SHEET ARRANGEMENTS**

The Company had no off-balance sheet arrangements for the periods under review.

## TRANSACTIONS WITH RELATED PARTIES

The following tables summarize related party expenses incurred by the Company, primarily on a cost-recovery basis, with companies related by way of directors or significant shareholders in common. The tables summarize the transactions with related parties and the types of expenditures incurred with related parties:

	Three months ended March 31,	
	2017	2016
	\$'000	\$'000
GMM Tech Holdings Inc. (a)	731	-
Ivanhoe Capital Aviation LLC (b)	499	300
Global Mining Management Corporation (c)	451	689
Ivanhoe Capital Pte Ltd (d)	146	66
Ivanhoe Capital Services Ltd. (e)	88	218
HCF International Advisors (f)	46	55
	<b>1,961</b>	<b>1,328</b>
Consulting	780	64
Travel	638	377
Salaries and benefits	433	709
Office and administration	110	178
	<b>1,961</b>	<b>1,328</b>

The above noted transactions were in the normal course of operations and were measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

As at March 31, 2017, trade and other payables included \$1.5 million (December 31, 2016: \$1.2 million) with regards to amounts due to related parties related by way of director or officers in common. These amounts are unsecured and non-interest bearing.

- (a) GMM Tech Holdings Inc. ("GMM Tech") is a private company incorporated in British Columbia, Canada and is 100% owned by Global Mining Management Corporation (Global). GMM Tech provides information technology services to the Company on a cost-recovery basis.
- (b) Ivanhoe Capital Aviation LLC (Aviation) is a private company owned indirectly by the Executive Chairman of the Company. Aviation operates an aircraft for which the Company contributes toward the running costs.
- (c) Global is a private company based in Vancouver. The Company and the Executive Chairman of the Company hold an indirect equity interest in Global. Global provides administration, accounting and other services to the Company on a cost-recovery basis.
- (d) Ivanhoe Capital Pte. Ltd. (Capital) is a private company owned indirectly by the Executive Chairman of the Company. Capital provides administration, accounting and other services in Singapore on a cost-recovery basis.
- (e) Ivanhoe Capital Services Ltd. (Services) is a private company owned indirectly by the Executive Chairman of the Company. Services provides for salaries administration and other services to the Company in Singapore and Beijing on a cost-recovery basis.



- (f) HCF International Advisers (HCF) is a corporate finance adviser specializing in the provision of advisory services to clients worldwide in the metals, mining, steel and related industries. Guy de Selliers is the President and co-founder of HCF, which provides financial advisory services to the Company.

## CRITICAL ACCOUNTING ESTIMATES

The Company's significant accounting policies are presented in Note 2 to the consolidated financial statements for the year ended December 31, 2016. The preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the end of the reporting period presented and reported amounts of expenses during said reporting period. Actual outcomes could differ from these estimates. The consolidated financial statements include estimates that, by their nature, are uncertain. The impacts of such estimates are pervasive throughout the consolidated financial statements and may require accounting adjustments based on future occurrences. Revisions to accounting estimates are recognized in the year in which the estimate is revised and future years if the revision affects both current and future years. These estimates are based on historical experience, current and future economic conditions and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Significant assumptions about the future and other sources of estimation uncertainty at the end of the reporting period, which could result in a material adjustment to the carrying amounts of assets and liabilities in the event that actual results differ from assumptions made, include, but are not limited to, the following:

(i) *Technical feasibility and commercial viability of projects*

All direct costs related to the acquisition of mineral property interests are capitalized by property or project. Exploration costs are charged to operations in the period incurred, until such time as the Company determines that a property is technically feasible and commercially viable, where after development costs are capitalized. In making this determination, the Company considers whether a proposed project is capable of being developed at a sufficient return to justify the capital and managerial resources that must be committed to the project. The determination is made on a property-by-property basis and generally coincides with the finalization of a preliminary economic assessment or pre-feasibility study of the property. Exploration costs include value-added taxes incurred in foreign jurisdictions when recoverability of those taxes is uncertain.

In determining whether an exploration and evaluation property is technically feasible and commercially viable, the Company considers several criteria, including:

- a technical analysis of the basic geology of the project;
- a mine plan for accessing and exploiting the ore body;
- a process flow sheet for processing the ore generated from mining;
- projections as to the capital cost of constructing the project;
- projections as to the cost of operating the project in accordance with the mine plan;
- projections as to revenues from the concentrate or other mineral product to be generated from operations in accordance with the mine plan; and
- an economic analysis of the project based on the projected capital and operating costs and production revenues.

## **CHANGES IN ACCOUNTING POLICIES INCLUDING INITIAL ADOPTION**

### **Newly adopted accounting standards**

The following standards became effective for annual periods beginning on or after January 1, 2017, with earlier application permitted. The Company adopted these standards in the current period, which did not have a material impact on its consolidated financial statements.

- Amendment to IAS 12 – Income taxes. The amendments were issued to clarify the requirements for recognising deferred tax assets on unrealised losses.
- Amendment to IAS 7 – Cash flow statements.
- Annual improvements 2014-2016. IFRS 12 - 'Disclosure of interests in other entities' regarding clarification of the scope of the standard.

### **Accounting standards issued but not yet effective**

- IFRS 15 – Revenue from contracts with customers. (i)
- IFRS 2 – Share-based payments. (i)
- Amendment to IFRS 9 - 'Financial instruments', on general hedge accounting. (i)
- IFRS 16 - 'Leases'. (ii)
- IFRIC 22 - 'Foreign currency transactions and advance consideration'. (i)
- Annual improvements 2014-2016. IFRS 1 - 'First-time adoption of IFRS'. (i)
- Annual improvements 2014-2016. IAS 28 - 'Investments in associates and joint ventures'. (i)

(i) Effective for annual periods beginning on or after January 1, 2018

(ii) Effective for annual periods beginning on or after January 1, 2019

The Company is in the process of determining the impact of the adoption of these standards on the consolidated financial statements, if any. The Company has not yet adopted these new and amended standards.

## FINANCIAL INSTRUMENTS AND OTHER INSTRUMENTS

### Fair value of financial instruments

The Company's financial assets and financial liabilities are categorized as follows:

Financial instrument	Level	March 31, 2017 \$'000	December 31, 2016 \$'000
<b>Financial assets</b>			
<i>Financial assets at fair value through profit or loss</i>			
Investment in listed entity	Level 1	5,594	2,720
<i>Loans and receivables</i>			
Promissory note receivable	Level 3	11,620	10,804
<b>Financial liabilities</b>			
<i>Other liabilities</i>			
Borrowings	Level 3	27,379	26,875

IFRS 13 - "Fair value measurement", requires an explanation about how fair value is determined for assets and liabilities measured in the financial statements at fair value and establishes a hierarchy into which these assets and liabilities must be grouped based on whether inputs to those valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's assumptions. The two types of inputs create the following fair value hierarchy:

- Level 1: observable inputs such as quoted prices in active markets;
- Level 2: inputs, other than the quoted market prices in active markets, which are observable, either directly and/or indirectly; and
- Level 3: unobservable inputs for the asset or liability in which little or no market data exists, therefore require an entity to develop its own assumptions.

The Company has two promissory notes:

- The fair value of the promissory note received as part of the purchase consideration when the Company sold its Australian subsidiaries was originally determined assuming repayment occurs on March 31, 2018 and is discounted using a rate of 8%.
- The fair value of the promissory note receivable by the Company from Crystal River was originally determined assuming repayment occurs on December 31, 2017 and is discounted using a rate of 8.3%.

The carrying value of the promissory notes are not significantly different to the fair value.

The fair value of borrowings are determined in accordance with generally accepted pricing models based on discounted future cashflow analysis. The fair value of the loan payable to ITC Platinum Development Limited was originally determined assuming repayment occurs on August 31, 2022 and using an interest rate of LIBOR plus 7%. The carrying value of borrowings is not significantly different to their fair value.

The fair value of the Company's remaining financial instruments, which include the purchase price receivable, trade and other payables and the financial liability, were estimated to approximate their carrying values, due primarily to the immediate or short-term maturity.

## Finance income

The Company's finance income is summarized as follows:

	<b>March 31, 2017</b>	March 31, 2016
	<b>\$</b>	<b>\$</b>
Interest from joint venture	<b>4,552</b>	3,507
Unwinding discount	<b>1,115</b>	4,285
Other interest income	<b>762</b>	677
	<b>6,429</b>	8,469

The interest from joint venture is interest received from the Kamo Holding joint venture on shareholder loans advanced by the Company where each shareholder is required to fund Kamo Holding in an amount equivalent to its proportionate shareholding interest. The unwinding discount represents the unwinding of the purchase price receivable from Zijin.

## Financial risk management objectives and policies

The risks associated with the Company's financial instruments and the policies on how to mitigate these risks are set out below. Management manages and monitors these exposures to ensure appropriate measures are implemented in a timely and effective manner.

### *Foreign exchange risk*

The Company incurs certain of its expenses in currencies other than the U.S. dollar. As such, the Company is subject to foreign exchange risk as a result of fluctuations in exchange rates. The Company has not entered into any derivative instruments to manage foreign exchange fluctuations, however, management monitors foreign exchange exposure.

The carrying amount of the Company's foreign currency denominated monetary assets and liabilities at the respective statement of financial position dates are as follows:

	<b>March 31, 2017</b>	December 31, 2016
	<b>\$'000</b>	<b>\$'000</b>
<b>Assets</b>		
Canadian dollar	<b>1,914</b>	2,479
Australian dollar	<b>5,596</b>	2,720
South African rand	<b>20,258</b>	20,486
British pounds	<b>659</b>	695
<b>Liabilities</b>		
Canadian dollar	<b>(201)</b>	(1,000)
Australian dollar	<b>-</b>	(21)
South African rand	<b>(4,818)</b>	(7,384)
British pounds	<b>-</b>	(162)

### Foreign currency sensitivity analysis

The following table details the Company's sensitivity to a 5% decrease in the U.S. dollar against the foreign currencies presented. The sensitivity analysis includes only outstanding foreign currency denominated monetary items not denominated in the functional currency of the Company or the relevant subsidiary and adjusts their translation at the end of the period for a 5% change in foreign currency rates. A positive number indicates a decrease in loss for the year where the foreign currencies strengthen against the U.S. dollar. The opposite number will result if the foreign currencies depreciate against the U.S. dollar.

	<b>March 31, 2017 \$'000</b>	<b>December 31, 2016 \$'000</b>
Canadian dollar	<b>86</b>	62
Australian dollar	<b>280</b>	135
South African rand	<b>(47)</b>	(26)
British pounds	-	1

### *Credit risk*

Credit risk is the risk of an unexpected loss if a customer or third party to a financial instrument fails to meet its contractual obligations. Credit risk for the Company is primarily associated with trade and other receivables and cash equivalents as well as long-term loan receivables.

The Company reviews the recoverable amount of their receivables at each statement of financial position date to ensure that adequate impairment losses are made for unrecoverable amounts. In this regard, the Company considers that the credit risk is significantly reduced. The credit risk on cash equivalents is limited because the cash equivalents are composed of financial instruments with major banks that have investment grade credit ratings assigned by international credit-rating agencies and have low risk of default. The credit quality of financial assets that are neither past due nor impaired can be assessed by reference to historical information about counterparty default rates. The Company has a purchase price receivable from Zijin which will be received in five equal instalments, payable every 3.5 months from the date of closing. The first four instalments were received in March 2016, July 2016, October 2016 and February 2017. The installment payments owing from Zijin are secured by a pledge of shares of Kamoa Holding Limited owned by Zijin and which originally represented 24.75% of the outstanding shares of that entity. Should Zijin default on any installment payment, a subsidiary of the Company is entitled to enforce on the pledge of shares, including by requiring the re-transfer of ownership of 1/5th of the pledged shares back to a subsidiary of the Company, which, if it occurred, would result in a reduction in the share ownership of Kamoa Holding Limited by Zijin.

### *Liquidity risk*

In the management of liquidity risk of the Company, the Company maintains a balance between continuity of funding and flexibility through the use of borrowings. Management closely monitors the liquidity position with the goal of maintaining adequate sources of funding to finance the Company's projects and operations.

The following table details the Company's expected remaining contractual maturities for its financial liabilities. The table is based on the undiscounted cash flows of financial liabilities based on the earliest date on which the Company can be required to satisfy the liabilities.

	Less than 1 month	1 to 3 months	3 to 12 months	More than 12 months	<b>Total undiscounted cash flows</b>
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>As at March 31, 2017</b>					
Trade and other payables	9,399	1,603	2	772	<b>11,776</b>
Current income tax liabilities	1	-	-	-	<b>1</b>
Non-current borrowings	-	-	-	34,477	<b>34,477</b>
<b>As at December 31, 2016</b>					
Trade and other payables	13,903	366	88	783	<b>15,140</b>
Current income tax liabilities	1	-	-	-	<b>1</b>
Non-current borrowings	-	-	-	34,270	<b>34,270</b>

#### *Interest rate risk*

The Company's interest rate risk arises mainly from long term borrowings and the loan advanced to the joint venture. The Company's main exposure to interest rate risk arises from the fact that the Company earns and incurs interest on interest rates linked to LIBOR.

If interest rates (including applicable LIBOR rates) had been 50 basis points higher or lower and all other variables were held constant, the Company's loss for the year ended March 31, 2017 would have increased or decreased by \$2.6 million.

### **DESCRIPTION OF CAPITAL STOCK**

As at May 10, 2017, the Company's capital structure consists of an unlimited number of Class A common shares without par value (the "Class A Shares"), an unlimited number of Class B common shares without par value (the "Class B Shares") and an unlimited number of preferred shares without par value. At this date 786,171,143 Class A Shares, nil Class B Shares, nil warrants and nil preferred shares were issued and outstanding.

The Company granted no options in 2016 or 2017 to date. As at May 10, 2017, there were 100,000 options, from individual stock-option agreements exercisable into 100,000 Class A Shares and 24,461,600 options issued in terms of the Equity Incentive Plan exercisable into 24,461,600 Class A Shares.

The Company granted 43,683 restricted share units (RSUs) in 2017 to date and 2,013,539 RSUs in 2016 per the Company's restricted share unit plan. As at May 10, 2017, there were 6,858,625 RSUs which may vest into 6,858,625 Class A Shares.



## **DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management is responsible for the design and operation of disclosure controls and procedures (DC&P) and internal control over financial reporting (ICFR) in order to provide reasonable assurance that material information related to the Company, including its consolidated subsidiaries, is made known to the Company's certifying officers. The Company's Chief Executive Officer (CEO) and Chief Financial Officer (CFO) have each evaluated the design effectiveness of the Company's DC&P and ICFR as of March 31, 2017 and, in accordance with the requirements established under National Instrument 52-109 - Certification of Disclosure in Issuer's Annual and Interim Filings, the CEO and CFO have concluded that these controls and procedures have been designed and operate to provide reasonable assurance that material information relating to the Company is made known to them by others within the Company and that the information required to be disclosed in reports that are filed or submitted under Canadian securities legislation are recorded, processed, summarized and reported within the time period specified in those rules.

The Company's CEO and CFO have used the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework to evaluate the design and operation of the Company's ICFR as of March 31, 2017 and have concluded that these controls and procedures have been designed and operated effectively to provide reasonable assurance that financial information is recorded, processed, summarized and reported in a timely manner. Management of the Company was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. The result of the inherent limitations in all control systems means design and operation of controls cannot provide absolute assurance that all control issues and instances of fraud will be detected.

During the three months ended March 31, 2017, there were no changes in the Company's DC&P or ICFR that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

## **RISK FACTORS**

The Company has summarized its foreign exchange risk, credit risk, interest rate risk and liquidity risk under the "Financial risk management objectives and policies" sub-heading under the "Financial instruments and other instruments" section in this MD&A. Additional risks and uncertainties are discussed in the Company's Annual Information Form filed with Canadian provincial regulatory authorities and available at [www.sedar.com](http://www.sedar.com).

## **DISCLOSURE OF TECHNICAL INFORMATION**

Disclosures of a scientific or technical nature in this MD&A have been reviewed and approved by Stephen Torr, who is considered, by virtue of his education, experience and professional association, a Qualified Person under the terms of NI 43-101. Mr. Torr is not considered independent under NI 43-101 as he is the Vice President, Project Geology and Evaluation. Mr. Torr has verified the technical data disclosed in this MD&A.

Ivanhoe had prepared a current independent NI 43-101-compliant technical report for each of the Platreef Project, the Kipushi Project and the Kamoa-Kakula Project, which are available under the Company's SEDAR profile at [www.sedar.com](http://www.sedar.com):

- Technical Report dated January 20, 2017 prepared by OreWin Pty Ltd, Amec Foster Wheeler and SRK Consulting Inc. covering the Company's Kamoa-Kakula Project;

- Technical Report dated April 22, 2016 prepared by OreWin Pty Ltd, Amec Foster Wheeler, Stantec Inc., SRK Consulting Inc., and DRA Projects (Pty) Ltd. covering the Company's Platreef Project; and
- Technical Report dated March 11, 2016 prepared by MSA Group (Pty) Ltd and OreWin Pty Ltd covering the Company's Kipushi Project.

These technical reports include relevant information regarding the effective dates and the assumptions, parameters and methods of the mineral resource estimates on the Platreef Project, the Kipushi Project and the Kamo-a-Kakula Project cited in this MD&A, as well as information regarding data verification, exploration procedures and other matters relevant to the scientific and technical disclosure contained in this MD&A in respect of the Platreef Project, Kipushi Project and Kamo-a-Kakula Project.

### **ADDITIONAL INFORMATION**

Additional information regarding the Company, including the Company's Annual Information Form, is available on SEDAR at [www.sedar.com](http://www.sedar.com).