Appendix1

JORC Code, 2012 Edition – Table 1

Section 4 Estimation and Reporting of Ore Reserves

(Section 1 Sampling Techniques and Data, Section 2 Reporting of Exploration Results and Section 3, Estimation and Reporting of Mineral Resources have been reported previously; 17 August 2015)

Criteria / JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves ▪ *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* ▪ *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	The Mineral Resource estimate used as the basis of this Ore Reserve was compiled by the MSA Group in South Africa on 29 July 2015 and published by Intrepid Mines Limited on 17 August 2015. This Mineral Resource Estimate which is inclusive of Phase 8 of the resource definition drilling including 30 additional diamond drill holes, totaling 12,438 m completed in 2014. The estimate is materially different to the Resource Estimate published by Blackthorn Resources (16 December 2013), which was the basis of the previous Ore Reserve Estimate (29 April 2014). The Measured tonnes and grade are similar; however the Indicated Resource tonnage has been reduced, leading to an overall 28% reduction in Measured and Indicated Resource tonnes. The estimation technique used is appropriate for sub-level caving and the model block size (20mN x 20mE x 20mRL) is appropriate for the deposit geometry, data density and the non-selective nature of the mining method. The Mineral Resource estimate stated on 29 July 2015 is inclusive of this Ore Reserve.
Site visits ▪ *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* ▪ *If no site visits have been undertaken indicate why this is the case.*	A visit to the Kitumba site was made by the Competent Person on 8 to 10 September 2015. This visit included an examination of representative samples of drill core for both geotechnical and geological characterization, inspection of proposed infrastructure sites and of the estimated surface expression of the caving zone as well as discussions with site technical personnel.
Study status ▪ *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* ▪ *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to*	The Kitumba deposit has been subject of extensive studies at pre-feasibility level. This includes the original PFS, an Optimised PFS (OPFS) and further option studies most recently completed by SNC Lavalin and its subcontractors, which focused on reducing project capital and the changes to the mine design as a result of the updated Mineral Resource. These studies have assessed all applicable modifying factors and have established technical and economic viability at the nominal long term copper price of $3.00/lb.

<table>
<tr><th>Criteria / JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</td><td></td></tr>
<tr><td>Cut-off parameters
The basis of the cut-off grade(s) or quality parameters applied.</td><td>Ore selection is based on a cut-off grade (cog) estimated using the following factors derived from the OPFS.
<table>
<tr><th>Criteria</th><th>Cut-off Grade</th><th>Shut-off Grade</th></tr>
<tr><td>Metallurgical recovery</td><td>90%</td><td>90%</td></tr>
<tr><td>Copper price</td><td>US$3.00/lb</td><td>US$3.00/lb</td></tr>
<tr><td>Metal royalty
Zambian Government
South 32</td><td>
6% Gross
2% NSR</td><td>
6% Gross
2% NSR</td></tr>
<tr><td>Effective price</td><td>US$2.78/lb</td><td>US$2.78/lb</td></tr>
<tr><td>Mining cost</td><td>US$24.2/t</td><td>US$7.0/t</td></tr>
<tr><td>Processing cost</td><td>US$38.2/t</td><td>US$38.2/t</td></tr>
<tr><td>G&A</td><td>US$6.0/t</td><td>US$6.0/t</td></tr>
<tr><td>Total operating cost</td><td>US$68.4/t</td><td>US$51.2/t</td></tr>
<tr><td>Breakeven cog</td><td>1.2%</td><td>0.9%</td></tr>
</table>
The cut-off grade used to establish the design envelope and the shut-off grade is an operational factor used to determine when a draw point will cease to be extracted.
The Ore Reserve mine planning is based on a declining cut-off grade strategy whereby cut-off grades higher than the breakeven are applied in the initial stages of the mine to boost revenue and expedite capital payback. The aim of the strategy is to select a cut-off grade that maximises project NPV.</td></tr>
<tr><td>Mining factors or assumptions
The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).
The choice, nature and appropriateness of</td><td>The Kitumba copper deposit is hosted in a haematitic breccia system which occurs along the Kitumba Fault Zone (KFZ) that outcrops as a prominent north-south trending ridge forming part of the Kitumba Hills.
Copper grades have been leached from the top 200m of the zone.
Sub-level caving was selected as the appropriate mining method at the completion of the Pre-Feasibility study. This was due to the deposit being too deep (overlain by waste) for open pit mining and having insufficient rock mass strength to be efficiently mined by stoping methods.
The PFS and subsequent option studies reviewed mine access options and concluded that a decline was the lowest overall cost, given the production rate, depth and mine life.
Ore dilution and recovery was modelled using dilution mixing assumptions from the OPFS.</td></tr>
</table>

Criteria / JORC Code explanation	Commentary
the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. ▪ *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* ▪ *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* ▪ *The mining dilution factors used.* ▪ *The mining recovery factors used.* ▪ *Any minimum mining widths used.* ▪ *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* ▪ *The infrastructure requirements of the selected mining methods.*	The sub-level cave design is based on a comprehensive geotechnical assessment with data sufficient for a project at PFS stage. Geotechnical assessment has been undertaken to assess: ▪ requirements for development ground support, ▪ caveability of the overlaying stratum, ▪ stand-off distances of 70m for infrastructure, and ▪ pillar sizing between draw points. The mineralisation is hosted in a melange of anastomosing or anabranching of numerous faults and sheared zones of varying rock qualities ranging from very good through to very poor quality rock. The rock has intact strengths (UCS) ranging from about 90MPa to 220MPa. Although the strongest intact rock is very strong, it occurs with a jointed rock mass. The Rock Mass Rating RMR shows values in the range of 23 to 50 for 90% of the mineralized zone. An analysis of caveability using Laubscher's techniques indicates that the most competent rock mass (Class 1), will have a typical hydraulic radius of approximately 27m (with possible ranges of 21m to 31m) which equates to an equivalent square cave opening of approximately 105m x 105m. Typical levels are in excess of 200m x 200m. A level interval of 25m and a drawpoint spacing of 14m was selected for all levels as suitable for the rock mass strength and a balance between recovery and development intensity. Analysis of seven production scenarios indicated a preferred production rate of 1.5 to 2 million tonnes per annum based on the balance between operating cost and project capital and mine life. The production scenarios considered a complete analysis from mine to mill. The subsidence zone at the end of mine life will be about 0.5km in diameter projected upwards at 45 degrees from the base of the mine. All mine development and surface infrastructure were designed to be outside the zone of influence of the final subsidence. Once the cave has broken through at surface, heavy rainfall events may wash overlying soils and weak sediments into the mine. This will tend to occur as a high rate inflow as opposed to a catastrophic mud rush, due to the large and interlocking rocks in the cave. It nevertheless requires high capacity pumping which has been allowed for in the infrastructure assessment. No stress measurements have been undertaken, but based on the rock types and the limited depth of the proposed mine design, the in-situ stresses are not expected to impact on mine access and infrastructure. Mining induced stress may manifest as localized failures in production areas, but preliminary modelling indicates that susceptible areas can be assessed during development and that ground failures can be managed with appropriate ground support and reinforcement. Development tonnages are 100% recovered with no dilution. Production tonnages are modelled to an economic shut off grade of 0.9% Cu, not exceeding the maximum

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	draw percentages listed below: ▪ first level – 40% of tonnes ▪ second level – 60% of tonnes ▪ third level – 90% of tonnes ▪ fourth level – up to 120% of tonnes ▪ fifth and consecutive levels – up to 150% of tonnes This establishes the "blanket" of ore to minimize dilution entry. The overall recovery is 104% in terms of contained metal allowing for the Measured and Indicated Resources that are below cut-off but are added as dilution. The net dilution is 11% in grade and 16% in tonnes. This occurs because the diluting material from the overlaying strata has an average grade of 0.8% Cu. The dilution for this Ore Reserve estimate is lower than the previous estimate as the objective has been to maximise mine head grade. Approximately 3% of Inferred Resources are included in the mine schedule and in the economic analyses. This is only to the extent that its recovery is required to access Measured or Indicated Resource and Inferred Resource is not material to the economics of the Reserves as stated. Detailed mine designs and development schedules were created for the entire mine. These included the access decline, crosscuts, access drives, footwall drives, ore drives, ventilation drives and rises.
Metallurgical factors or assumptions ▪ *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* ▪ *Whether the metallurgical process is well-tested technology or novel in nature.* ▪ *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* ▪ *Any assumptions or allowances made for deleterious elements.* ▪ *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* ▪ *For minerals that are defined by a*	The proposed flowsheet has been designed to accommodate the variable mineralogy within the ore body over the life of mine. Fundamentally, the process comprises a comminution circuit followed by froth flotation to yield separate flotation concentrate and tails streams. The concentrate is fed to a pressure oxidation (POX) autoclave to simultaneously leach the copper, and to generate sulphuric acid and heat. The autoclave discharge slurry is combined with the flotation tails in an atmospheric acid leaching circuit to extract the copper in the oxide and secondary sulphide copper minerals. The final leach liquor is separated from the barren leach solids in a counter-current decantation circuit to yield a pregnant leach solution (PLS) which is then fed to a solvent extraction (SX) circuit. The loaded strip liquor (rich electrolyte) is subsequently pumped to an electrowinning (EW) circuit to generate copper cathode. A facility is provided to enable supplementary sources of sulphur (either as chalcopyrite concentrate and/or elemental sulphur) to be added to the POX leaching circuit, thereby providing flexibility during low primary sulphide arising from the ROM ore. Each of the metallurgical unit operations proposed for the Kitumba flowsheet is widely used on a commercial scale and well understood, both from a metallurgical and operability perspective. The metallurgical testwork to date has been of a batch nature, focusing on achieving maximum copper recoveries from the leaching circuit using a range of different temperatures, residence times, and slurry densities. The tests have been performed on different composite samples deemed representative of different periods within the mine life. Copper recoveries of 98% and 80% have been consistently achieved

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specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	from the POX leaching and atmospheric acid leaching circuits respectively, resulting in greater than 90% overall copper recovery. No specific allowances have been made for deleterious elements. Tests have indicated very low levels of water soluble copper. Elemental analysis of each of the Kitumba drill core samples revealed consistently low life of mine concentrations of uranium (~21ppm) while pockets of high concentrations of manganese increased the life of mine concentrations to approximately 0.7% To date, no pilot scale testwork has been undertaken, although a full pilot program is proposed for the subsequent Definitive Feasibility Study (DFS). The samples for the pilot testwork campaign have been carefully selected from the most recent drilling campaign and are designed to be representative of the Life of Mine and specific periods within. The Copper within the Kitumba deposit is associated with a number of different oxide and primary and secondary sulphide minerals. Estimates have been made of the mineralogical composition for each year of the mine production schedule as a basis for input into a METSIM mass and energy balance, in order to predict the metallurgical response and to determine the anticipated reagent and utility requirements. These estimates are based on mineralogical data taken from the early DFS metallurgical testing being undertaken at Anglo Research Laboratories in Johannesburg. It is acknowledged that a more detailed understanding of the Kitumba deposit mineralogy on a year by year basis is needed in order to more firmly base the input data to the mass and energy balances for each year of mine production. This will be confirmed in the subsequent DFS variability test work.
Environmental ▪ *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	A specialist consultant has investigated the feasibility of the Project from an environmental and social impact management perspective and facilitated the environmental impact assessment processes required under Zambian law and in accordance with the principles of sustainable development. An Environmental Project Brief (EPB) was submitted to the Environmental Council of Zambia (ECZ) which is now known as the Zambia Environmental Management Agency (ZEMA) on 22 April 2010. The EPB was approved in a letter dated 28 May 2010. Subsequently, the Terms of Reference (“ToR”) for an Environmental Impact Assessment (EIA) was approved by ZEMA. The Environmental Impact Study (EIS) in accordance with the approved ToR has been completed and was subsequently approved by ZEMA. The underground mine will produce limited quantities of waste rock and treatment plant process tailings on a continuing basis. The former will be stored on a waste rock dump (WRD) and the tailings managed within a tailings storage facility (TSF).
Infrastructure ▪ *The existence of appropriate infrastructure:*	The OPFS has determined the following:

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availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	▪ Daily operations will be supported by site infrastructure including offices, stores and warehousing, laboratory and mine change rooms. Oxygen for the pressure oxidation autoclave will be provided by an on-site oxygen plant supplied and operated under contract. ▪ Accommodation for the operations work force will be provided in a 600 room permanent village to be constructed adjacent to the process plant. ▪ The site will be fully fenced with an appropriate level of fencing to prevent access by wild animals. ▪ The site is accessed via 52km of dirt road from Mumbwa. It is a gazetted national road but is generally in poor condition and will require upgrading to allow for construction traffic and ultimately operations traffic. The Zambian government has announced its intention to upgrade the public portion of this road. If this does not occur prior to construction, the works required to improve and maintain this road can be managed within the budget contingency. Power supply: ▪ Intrepid Mines is negotiating with ZESCO, the Zambian national electricity provider, for the provision of power from the grid to the Project. The basis for the OPFS is that the high voltage supply for the Kitumba Project will be sourced via a ~5 km spurline off the newly completed Northwest 330kV power line adjacent to the Project.
Costs ▪ *The derivation of, or assumptions made, regarding projected capital costs in the study.* ▪ *The methodology used to estimate operating costs.* ▪ *Allowances made for the content of deleterious elements.* ▪ *The source of exchange rates used in the study.* ▪ *Derivation of transportation charges.* ▪ *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* ▪ *The allowances made for royalties payable, both Government and private.*	The costs have been estimated as follows: ▪ Mining capital costs are estimated from first principles based on equipment, labour, and development requirements indicated by the mine schedule. In addition, mining capital costs are also based on ventilation, dewatering, electrical and other engineering study work. ▪ Mining operating costs are estimated from first principles based on equipment, labour, development and stoping requirements indicated by the mine schedule. ▪ Mining capital and operating costs include a 20% allowance for contractor markup and margin. ▪ Process capital costs have been estimated from preliminary engineering and SNC-Lavalin database of costs from similar projects in the region. ▪ Process operating costs have been derived from reagent consumption data (calculated from a series of mass and energy balances), estimated power consumptions, labour costs, maintenance, and analytical requirements. ▪ No deleterious elements have been identified and thus no allowances made. ▪ The exchange rates used for estimating costs are current at the time of preparing the estimates (Q2 CY 2015). ▪ Transport charges for materials to site have been derived from database information for the

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	region. Charges for shipping copper cathode to assumed customers in Shanghai have been provided by a specialist transport company (Antrak Logistics), based on export through the port of Dar es Salaam (Tanzania). ▪ A government royalty of 6% applies. A private royalty of 2% NSR applies.
Revenue factors ▪ *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* ▪ *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	Estimated copper production is based on the head grade from detailed mine planning including dilution and recovery estimates and process losses determined by metallurgical testwork. Revenue for financial modelling has been based on current long term copper price forecasts of US $3.11/lb, based on an average long-term copper price forecast of 12 brokers. Pending pilot testwork production of copper cathode material, it has been assumed that Kitumba copper will attract LME cathode payment terms.
Market assessment ▪ *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* ▪ *A customer and competitor analysis along with the identification of likely market windows for the product.* ▪ *Price and volume forecasts and the basis for these forecasts.* ▪ *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	While a marketing study was commissioned for the PFS, only preliminary discussions have been held with potential concentrate providers at this stage. Transport of the copper cathode assumes road export to Dar es Salam in Tanzania or Richards Bay in South Africa for shipping to Asian markets and to Walvis Bay in Namibia for shipping to European or North American markets. Road distances for each port are similar. As copper cathode is widely traded, Intrepid has many marketing options. Wood Mackenzie, who are specialists in metals and mining economics, are forecasting a short to medium term over-supply of copper with a return to under-supply after 2017. Their long term price forecast is greater than that used for the PFS.
Economic ▪ *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* ▪ *NPV ranges and sensitivity to variations in*	The IRR and NPV for the Project is calculated in a cash flow model prepared for the purpose. The NPV of the Project is estimated using a real post-tax discount rate of 8%.pa The post tax NPV of the Project is US$164M at a copper price of $3.11/lb. The Project exhibits a positive NPV while the copper price remains above US$2.62/lb A sensitivity analysis was conducted on a number of value drivers; mining operating costs, processing operating costs, administration costs, capital costs and metallurgical recovery. Using an 8% discount rate, with the exception of copper price as indicated above, the discounted cash flow is positive for unfavourable

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the significant assumptions and inputs.	variation of up to 30%.
Social ▪ *The status of agreements with key stakeholders and matters leading to social licence to operate.*	Intrepid Mines and previous lease holders have consulted widely with the local chief, the surrounding villages, local farmers, Zambia Air Force, the Zambia Wildlife Authority and others. Discussions to date have not raised any intractable issues and there is general support for the mine as a source of jobs in an area of high unemployment. There is also support from the Zambian government for the project to proceed. Intrepid Mines is maintaining ongoing dialogue with all parties as the project develops.
Other *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* ▪ *Any identified material naturally occurring risks.* ▪ *The status of material legal agreements and marketing arrangements.* ▪ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	Naturally occurring risks (other than geological and geotechnical issues discussed above) include: ▪ The possibility of high rainfall events leading significant water inflow into the mine. This can be managed by including development at the base of the mine that can be temporarily flooded and provision of pumping capacity. High rainfall events may also lead to road flooding and temporary loss of site road access. ▪ The presence of water compartments within the caving zone which would lead to possible inundation. There is a program for the cave zone and surrounds to be sterilised and if high volumes of water are discovered a dewatering program will be instigated. ▪ Overall, the risks (whilst real) are not assessed to be intractable and mitigation is not expected to incur costs exceeding the estimated allowance. Other risks unique to Africa such as wild animals and tropical disease will require management plans but will not have a material impact on the project. Important government agreements include: ▪ Power supply through the state owned generator and network operator ZESCO. The country is currently experiencing severe power shortages. ZESCO have provided indicative terms for supply. No marketing arrangements or agreements have been signed. However, copper cathode is a readily tradable commodity and as such, the absence of agreements is not seen as a risk or impediment to the project development.
Classification ▪ *The basis for the classification of the Ore Reserves into varying confidence categories.* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.* ▪ *The proportion of Probable Ore Reserves*	All Proved Reserves are based on Measured Resources and Probable Reserves based on Indicated Resources. This result is based on the confidence provided by three largely independent studies into the project. The result that approximately 50% of the Ore Reserve is categorised as Proved appropriately reflects the Competent Persons view of the deposit.

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that have been derived from Measured Mineral Resources (if any).	
Audits or reviews ▪ *The results of any audits or reviews of Ore Reserve estimates.*	The Mineral Resource Estimate methodology has been independently reviewed by Coffey and Independent Resource Geologist Stuart Masters (from CS-2 Pty Ltd). There has been no audit of the Ore Reserve. However, this Ore Reserve estimate has been largely independently prepared to the previous Ore Reserve and agrees with its basis.
Discussion of relative accuracy/confidence ▪ *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ▪ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and*	The Ore Reserve is based on the following key elements: ▪ A current Mineral Resource estimate with a relatively high proportion of Measured Mineral Resource material that is considered to be sufficient to support a DFS. ▪ Geotechnical assessment which indicates that progression to DFS is justified. More geotechnical work will be required at a DFS level. ▪ The mine planning is based on the OPFS assumptions for SLC mixing which can be globally correct but will not model expected periodic fluctuations. ▪ Project costing has been independently estimated and is in broad agreement. ▪ Mine economics are based on long term commodity forecasts which carry inherent risk.

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confidence of the estimate should be compared with production data, where available.	