APPENDIX1: JORC CODE, 2012 EDITION

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g, cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g, 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g, submarine nodules) may warrant disclosure of detailed information.	• Assay results from the Diamond Drilling at Target H, Kitumba and Kantonga and RC results from Target J are presented here, RC drilling was conducted on Target H during the 2014 drilling season. • Core and RC chips were logged for lithology, re.golith state, alteration and mineralisation. Core was also logged for structure and density before being half split (HQ) or quarter split (PQ). Sampling was done following IAU protocols and QAQC procedures as per industry best practice. • Sampled on nominal 1m intervals varied in order to respect geological boundaries in mineralised zone, 2m outside mineralised zone. • Sample is dried, crushed (~2mm), milled and 200g split taken for four acid digest followed by ICP-MS and ICP-OES finish, and a 25g lead collection fire assay with AAS finish.
Drilling techniques	• Drill type (e.g, core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• Standard tube diamond core was HQ predominant with PQ pre-collars. Core was oriented using a Reflex ACT II. RC drilling was carried out using 4½" holes.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery	• Core recoveries are logged. Core recoveries for the Phase 9 exploration programme currently average 96.12%. • Core is reconstructed on angle iron for measurement against driller's blocks, marking of orientation lines and

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	and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	recording of driller's breaks. • Diamond core has high recoveries.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• All core has been logged for geological (lithology, mineralisation, alteration) and structure (alpha/beta angles, RQD, defect count) information. RC chips were logged for lithology, regolith state, alteration and mineralisation. All data is stored in a database. • All core was photographed. • All core was logged.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• All core is cut with purpose built core saws onsite, with half core (HQ and NQ size) collected for sampling, ensuring the same side of the core is consistently sampled. In the case of PQ size core, quarter core was cut and sampled. Field duplicates were submitted to monitor QC of sample preparation and laboratory assay precision. • RC chip samples were riffle split down to 2 kg of dry material and sent to the lab for further preparation and analysis. • Samples were submitted to the Intertek Genalysis Laboratory preparation facility in Chingola, Zambia and crushed.to 85%<2mm with a 1,200g subsample split (rotary and riffler) for pulverising to 85% <75µm. Regular sizing checks were undertaken and reported. • Sample sizes are appropriate to the grain size of the material being sampled.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	• Samples were submitted for a four acid digest (sulphuric, nitric, perchloric and hydrofluoric) and ICP finish for multi-elements and 25g fire assay and AAS finish for gold. • QA/QC procedures include; a chain of custody protocol, the systematic submittal of 20% QA/QC samples including field duplicates, field blanks and certified reference samples into the flow of samples submitted to

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	• Nature of quality control procedures adopted (e.g standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie, lack of bias) and precision have been established.	the laboratory. Re-assaying of the mineralised zones and submission of samples for umpire analysis by a second accredited laboratory will be carried out prior to inclusion in any updated Mineral Resource Estimate.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Significant intersections are reported by The MSA Group which is an independent contractor providing geological services to the company. • HDD_001 is a partial twin of HRC_002 which failed at 94 metres, results for HRC_002 were announced on the 9th of April • Data entry and verification is undertaken by MSA following an established protocol, all data is stored in a digital database and regularly backed-up. • No statistical adjustments to data have been applied.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Hole collars are surveyed by differential GPS at the end of each phase, down hole surveys were collected every 6m (inclined holes) and 12m (vertical holes) using Reflex and Gyro instruments during different phases of the project. Appropriate QC procedures were applied to verify down hole surveys. • The grid system for Kitumba is UTM WGS84, Zone 35 South. • An airborne laser elevation survey was flown as part of the Falcon™ dataset acquired in 2006.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• HDD_004 is the fourth deep diamond drill hole in Target H. KANDD_001 is the first diamond drill hole with complete data (some historical data exists) in Kantonga and KITDD_071A is reported as being part of Kitumba but outside of the Kitumba resource area • Not reported here. • Results not composited.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to	• Target H holes has been drilled on an azimuth of 310 perpendicular to the mapped (IP and surface structural mapping) NE striking structural trend. KANDD_001 KITDD_071A were targeted on inversions of geophysical datasets.

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	have introduced a sampling bias, this should be assessed and reported if material.	• No orientation based bias had been identified in the data to this point
Sample security	• The measures taken to ensure sample security.	• An unbroken sample chain of custody was implemented, as follows: – Plastic sample bags sealed and placed inside polyweave bags sealed with cable ties – Sample shipments examined on arrival at the laboratory and the sample dispatch form signed and returned with a confirmation of the security seals and the presence of all samples comprising each batch.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Audits of the sample preparation laboratories at AH Knight in Kitwe and Intertek Genalysis in Chingola and an audit of the Intertek Genalysis Laboratory in Johannesburg were conducted by the CP.

SECTION 2 REPORTING OF EXPLORATION RESULTS

(Criteria listed in the preceding section also apply to this section.)

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Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All holes presented are located entirely within the 100% owned Kitumba Mining licence 19820-HQ-LML. • The mining licence was granted on the 21st of November, 2014 for a period of 25 years.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The Mumbwa Project operated under joint venture with BHP Billiton from 2008-2011.
Geology	– Deposit type, geological setting and style of mineralisation.	– The Mumbwa project area is recognised as having IOCG type characteristics; the Kitumba deposit is located 7.5 km to the northwest of Target H. Kitumba it is hosted in a hematite breccia complex within intrusives of the Hook

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		Granitoid suite (Early Cambrian to Neoproterozoic). Mineralisation is supergene in nature (chalcocite, malachite, chalcosiderite, native copper) to 400+m, hypogene mineralisation consists primarily of chalcopyrite and pyrite. Target H is hosted in brecciated metasediments.
Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: – easting and northing of the drill hole collar – elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar – dip and azimuth of the hole – down hole length and interception depth – hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• See Tables in text of report.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g, cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Length-weighted average grades reported. No upper limit has been applied to copper grades in these exploration results. • A cut-off grade of 0.25% Cu, a maximum internal dilution of 2m (drilled width) and a drilled thickness of >2m are used as a guideline when delineating the drilled thickness intervals of mineralisation, unless otherwise stated. • All metal grades reported are single element.
Relationship between mineralisation widths and	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• True-widths are not quoted, as the mineralised zones are associated with sub-vertical zones of brecciation.

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intercept lengths	• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g, 'down hole length, true width not known').	
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• A plan map (Figure 1), is contained within this announcement.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All results are reported.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• There is no outstanding exploration data considered material that has not been previously reported or is not contained within this report.
Further work	• The nature and scale of planned further work (e.g, tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Future drilling on the Mumbwa project will focus on satellite prospects surrounding the Kitumba deposit.