TIGER RESOURCES LIMITED

**ABN 52 077 110 304**

15 January 2014

## TIGER RESOURCES INCREASES KIPOI CENTRAL COPPER RESERVE 112%

**Perth, Western Australia:** Tiger Resources Limited (ASX: TGS) is pleased to announce a 112% increase in the estimated Ore Reserve for Kipoi Central Stage 2 open pit, the principal deposit at the Kipoi Copper Project in the Democratic Republic of Congo (DRC).

The Ore Reserve estimate was independently completed by Cube Consulting Pty Ltd (Cube) and updates the estimate previously reported on 9th January 2013.

**Highlights**

- **30.14Mt at 1.31% Cu for 394,500 tonnes of contained copper**
- Kipoi Central Reserve increased **112%** , or 208,200t tonnes (up from 186,300 tonnes)
- Copper grade in reserve increased by **10%**
- Strip ratio for the Kipoi Central pit decreased by **33%**
- Reduced strip ratio will lower operating costs per tonne of ore mined

The increase in the Kipoi Central reserve estimate is the result of additional drilling undertaken in 2013 and the inclusion of primary material in the mine plan following completion of successful metallurgical test work.

The increased reserve at Kipoi Central will be mined and processed through the Stage 2 solvent extraction electrowinning (SXEW) plant which is currently under construction and due to commence production in Q2 2014. The plant is expected to produce 25,000 tonnes of copper cathode in its first full 12 months of operation and 50,000 tonnes per annum in subsequent years.

Tiger is currently producing copper in concentrate from its Stage 1 heavy media separation (HMS) plant.

Production guidance for Kipoi for 2014 is 39,000 tonnes of copper in concentrate at an average operating cost of $0.30/lb of copper produced, and 12,000 tonnes of copper cathode from the SXEW. Operating budgets for the SXEW are being prepared and will be advised once approved. The benefits of this increase in ore reserves will be announced with the economic assessment considering the increased grade and reduced stripping ratio.

Ore stockpiles and residues from the HMS plant will provide feed to the SXEW plant for the first two years of operations without the need for further mining. Site cash costs for the first two years of the SXEW operations are forecast to be $0.72/lb.

Table 1 Kipoi Central Reserves for Stage 2 SXEW Project (estimated 30th November 2013)

| Ore Reserves | Classification | Tonnes (Mt) | Copper Grade (%) | Copper (000't) |
|---|---|---|---|---|
| **Kipoi Central** | Proved | 1.6 | 2.6 | 40.9 |
| **Kipoi Central** | Probable | 28.6 | 1.2 | 353.6 |
| **Kipoi Central** | **Total** | **30.1** | **1.3** | **394.5** |

Calculations are rounded to the nearest 100,000 tonnes; 0.1 %Cu and 100 tonnes Cu metal. Errors of rounding may occur.

Table 2 Kipoi Central Reserves for Stage 2 SXEW (estimated 9th January 2013)

| Mineral Reserves | Classification | Tonnes (Mt) | Copper Grade (%) | Copper (000't) |
|---|---|---|---|---|
| **Kipoi Central** | **Probable** | **15.5** | **1.2** | **186.3** |

The ore reserves stated in Table 1 have been generated using the following data:

- Copper price used in the optimisation and for estimation of the cut off grades $3.00/lb
- Mining via open pit methods using the current mining costs
- Mining recoveries and dilution have been incorporated into the mineral resource model
- SXEW processing was selected as the preferred processing method
- Process recoveries were based on metallurgical testwork as detailed in JORC Table 1
- Cut-off grades were estimated after consideration of non-mining, break-even copper grade taking into account metallurgical recovery, site operating costs, royalties and revenues. The pit design was based on conventional pit optimisation techniques with detailed staged and final pit designs completed
- Due consideration was given to physical constraints and statutory charges, fees, royalties and taxes
- The marketing and delivery costs for the product were incorporated into the modelling activities
- The ore reserves were reported based on mineral resources classified as Measured and Indicated within the economic pit limits above the economic cut-off grade after due consideration of costs and physical constraints.

**BACKGROUND**

Tiger's 60%-owned Kipoi Project covers an area of 55 square km and is located 75km north-north-west of the city of Lubumbashi in the Katanga Province of the DRC. The project contains a 12km sequence of mineralised Roan sediments that host at least five known deposits: Kipoi Central, Kipoi North, Kileba, Judeira and Kaminafitwe.

The Company has reported JORC-compliant resources at four of the deposits: Kipoi Central, Kipoi North, Kileba and Judeira. The principal deposit is Kipoi Central, which contains a zone of high grade copper mineralisation within a much larger, lower grade global resource. Production targets are underpinned by estimated Ore Reserves which have been prepared by competent persons in accordance with the requirements of the JORC Code.

Tiger is undertaking a phased development at Kipoi, where the Stage 1 heavy media separation (HMS) plant is in production and on the basis of recently completed grade control drilling now expects to process 3.5Mt of ore grading approximately 7% Cu to produce a total of 132,000 tonnes of copper in concentrate over its 42 month life.

Construction of the Stage 2 SXEW plant commenced in January 2013 and is on schedule for first production of copper cathode in Q2 2014. The feasibility study (FS) for Stage 2 has confirmed the operation as a low-cost, high-margin project capable of producing 532,100 tonnes of copper cathode over eleven years, processing ore reserves from the Kipoi Central, Kileba and Kipoi North deposits and reject floats, slimes and medium grade ore stockpiles from the Stage 1 HMS operation. The Stage 2 site cash operating costs are forecast at $0.72/lb for the first two years of the operation (no mining required).

It is envisaged that ore from Judeira and other deposits within the Kipoi Project area, as well as the Lupoto Project, will also be processed during the Stage 2 operations, providing additional returns and increasing the mineral resources available as feedstock to the Stage 2 SXEW plant. Increased resources will potentially increase the eleven-year mine life demonstrated in the feasibility study and/or annual plant throughput.

For further information in respect of the Company's activities, please contact:


**Brad Marwood**
Managing Director
Tel: (+61 8) 6188 2000
Email: **bmarwood@tigerez.com**

**Stephen Hills**
Finance Director
Tel: (+61 8) 6188 2000
Email: **shills@tigerez.com**

**Nathan Ryan**
Investor Relations
Tel: (+61 0)420 582 887
Email: **nryan@tigerez.com**


Company website: www.tigerresources.com.au

***Caution Regarding Forward Looking Statements and Forward Looking Information:*** *This report contains forward looking statements and forward looking information, which are based on assumptions and judgments of management regarding future events and results. Such forward-looking statements and forward looking information, including but not limited to those with respect to the Stage 1 mining, HMS and spiral system operations and the development of a Stage 2 SXEW plant at Kipoi Central, involve known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any anticipated future results, performance or achievements expressed or implied by such forward-looking statements. Such factors include, among others, the actual market prices of copper, cobalt and silver, the actual results of current exploration, the availability of debt financing, the volatility in global financial markets, the actual results of future mining, processing and development activities and changes in project parameters as plans continue to be evaluated. There can be no assurance that the Stage 1 HMS plant will operate in accordance with forecast performance, that anticipated metallurgical recoveries will be achieved, that future evaluation work will confirm the viability of deposits identified within the project, that future required regulatory approvals will be obtained, that the Stage 2 expansion of the Kipoi Project will proceed as planned and within expected time limits and budgets or that, when completed, the expanded Kipoi Stage 2 project will operate as anticipated.*

***Competent Person Statement:*** *The information in this report that relates to Ore Reserves for Kipoi Central is based on, and fairly represents information and supporting documentation prepared by Mr Quinton de Klerk, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr de Klerk is a Director and Principal Consultant at Cube Consulting Pty Ltd. Cube Consulting Pty Ltd was engaged by Tiger Resources Limited to prepare the Kipoi Central Ore Reserves estimate and both Cube Consulting Pty Ltd and Mr de Klerk have declared themselves to be independent of the Company. Mr de Klerk has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr de Klerk consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

# JORC TABLE 1

**Section 1 Sampling Techniques and Data**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Sampling techniques** | • Nature and quality of sampling (eg cut channels, random chips, or specific specialized industry standard measurement tolls appropriate to the minerals under investigation, such as down hole gamma sondes, or handled XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.<br>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.<br>• Aspects of the determination of mineralization that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverized to produce a 30g 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 (eg submarine nodules) may warrant disclosure of detailed information. | • RC chips sampled at 1 metre intervals. This is riffle split to produce a sample of approximately 2kg to be sent to the laboratory for analysis. Some 2 metre and 4 metre composites intervals were taken.<br>• Diamond core is geologically logged and sampled to geological contacts with nominal samples lengths of 1metre or 0.5metres depending on core diameter size with a minimum sample length of 0.3m. Core samples for assay is half core with some quarter core before dispatch to the laboratory for analysis.<br>• Grade control RC chips sampled at 1 or 2 metre intervals. This is riffle split to produce a sample of approximately 1 to 2kg to be sent to the laboratory for analysis.<br>• AC chips sampled at 1 metre intervals. This is split into 500g sub-samples and sieved to -2mm particle size. |
| **Drilling techniques** | • Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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). | • Reverse circulation (RC) (140mm diameter), Diamond drilling (PQ, HQ, NQ) with standard and triple inner tubes, AC drilling (80mm diameter).<br>• Angled Diamond core has been oriented with the orientation mark determined by use of downhole chinagraph pencil spears. |
| **Drill sample recovery** | • Method of recording and assessing core and chip sample recoveries and results assessed.<br>• Measure taken to maximize sample recovery and ensure representative nature of the samples.<br>• Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. | • RC chip samples are weighed in the field before splitting.<br>• Diamond core recoveries are measured in the core trays.<br>• 70% of the samples measured have logged sample recoveries of over 80%. Some areas have low core recoveries in soft and oxidised material.<br>• Measures taken to maximize sample recovery and ensure representative nature of the samples are not known.<br>• No relationship between sample recovery and grade appears to exist when comparing sample recovery to grade for diamond core samples. |
| **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.<br>• Whether logging is qualitative or quantitative in mature. Core (or costean, | • All diamond resource definition core and RC chips have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation.<br>• Total length of logged resource definition drilling is 37,817meters of which |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | channel, etc) photography.<br>• The total length and percentage of the relevant intersections logged. | 17,564metres of mineralisation has been used in the estimate. |
| **Sub-sampling techniques and sample preparation** | • If core, whether cut or sawn and whether quarter, half or call core taken.<br>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.<br>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.<br>• Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.<br>• 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.<br>• Whether sample sizes are appropriate to the grain size of the material being sampled. | • Core is cut into half core with some quarter core samples taken.<br>• RC chips are riffle split at the drill rig to produce approx 2kg of sub-sample for dispatch to the laboratory.<br>• AC chips are air dried, riffle split and sieved to -2mm. AC assay results have not been used for grade estimation.<br>• For all sample types, the nature, quality and appropriateness of the sample preparation technique is industry standard.<br>• Field duplicates were taken at a ratio of 1:20. QAQC reports are prepared bi-monthly and upon request after completion of a dedicated campaign.<br>• Samples of 1-2 kg are considered as representative |
| **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.<br>• For geophysical tolls, 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.<br>• Nature of quality control procedures adopted (eg standards, blacks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. | • Assays are determined by 4 acid digest with ICP finish. Laboratory and assay procedures are appropriate for mineral resource estimation.<br>• QAQC consisted of standards, blanks and laboratory duplicates were used at a ratio of 1 in 30. All samples showed acceptable levels of accuracy and precision. |
| **Verification of sampling and assaying** | • The verification of significant intersections by either independent or alternative company personnel.<br>• The use of twinned holes.<br>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.<br>• Discuss any adjustment to assay data. | • No independent sampling has been undertaken by Cube.<br>• Mineralised intersections for available diamond core have been visually confirmed by Cube and site geologists and verified further by portable XRF devices on a 0.25m spacing.<br>• Data entry and verification is undertaken by CSA Global. |
| **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.<br>• Specification of the grid system used.<br>• Quality and adequacy of topographic control. | • Drill holes and trenches have been surveyed either by Differential GPS, Theodolite and handheld GPS. Downhole surveys have been taken with a Ranger single shot survey tool every 30m.<br>• The grid system is WGS84_35S.<br>• Topography was supplied by Photomap of South Africa based on aerial photography with ground survey control. This topography is adequate for resource estimation. |
| **Data spacing and** | • Data spacing for reporting of Exploration Results.<br>• Whether the data spacing and distribution is sufficient to establish the degree of | • Resource definition drilling spacing is variable being in the range of 25m X 25m to 100m X 100m. Grade control drilling is spaced at 10m X 5m. This spacing is |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **distribution** | geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied<br>• Whether sample compositing has been applied. | adequate to determine the geological and grade continuity for reporting of a combined Measured, Indicated and Inferred Mineral Resources. .<br>• Composited samples to 5 metre were used in the estimate. |
| **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.<br>• If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assesses and reported if material. | • Data is orientated orthogonal to the known strike of the deposit. No down dip drilling has been recorded or used in this estimate. |
| **Sample security** | • The measures taken to ensure sample security. | • Labelling and submission of samples complies with industry standard. |
| **Audits or reviews** | • The results of any audits or reviews of sampling techniques and data. | • Numerous reviews and audits have been undertaken at Tiger Resources and have discovered no issues with the sampling methods or data. |

**Section 2 Reporting of Exploration Results**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **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.<br>• The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area. | • The exploration results reported in this announcement are on a granted exploitation permit (mining licence) PE-11387 and form part of the Kipoi Copper Project. Tiger has a 60% interest in the Kipoi Copper Project and the remaining 40% interest is held by La Générale des Carrières et des Mines ("Gécamines"), a DRC State-controlled company.<br>• The exploitation permit is in good standing. |
| **Exploration done by other parties** | • Acknowledgement and appraisal of exploration by other parties. | • No exploration has been performed by another other party. |
| **Geology** | • Deposit type, geological setting and style mineralisation. | • Mineralisation at Kipoi Central deposit is hosted within Upper Roan sedimentary rocks. It occurs as stratiform, layer-parallel and structurally remobilised mineralisation in fault breccias and veins. Sulphide copper mineralisation occurs predominantly in deformed siltstones and carbonaceous siltstones and shales but also extends into the adjacent dolomites and volcanic rocks. The bulk of mineralisation occurs as broad zones of malachite (supergene copper carbonate |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | mineral) which is best developed adjacent to fractured and brecciated siltstones. Weathering of primary mineralisation has led to lateral dispersion and the formation of coherent zones of supergene mineralisation. |
| **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:<br>o Easting and northing of the drill hole collar<br>o Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar<br>o Dip and azimuth of the hole<br>o Down hole length and interception depth<br>o Hole length<br>• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not distract form the understanding of the report, the Competent Person should clearly explain why this is the case. | • Information for all resource definition drilling completed in 2013 is included in previously reported announcements.<br>• Detailed information in relation to the drill holes forming the basis of this Mineral Resource estimate is not included in this report on the basis that the information has been previously reported (refer ASX releases dated 7 February 2013, and 1 December 2011), the information is not material in the context of this report and its exclusion does not detract from the understanding of this report. For the sake of completeness, the following background information is provided in relation to the drill holes.<br>• Easting, northing and RL of the drill hole collars are in UTM Zone 35 (WGS-84) coordinates.<br>• Dip is the inclination of the hole from the horizontal. For example a vertically down drilled hole from the surface is -90°. Azimuth is reported in magnetic degrees as the direction toward which the hole is drilled.<br>• Down hole length of the hole is the distance from the surface to the end of the hole, as measured along the drill trace. Interception depth is the distance down the hole as measured along the drill trace. Intersection width is the downhole distance of an intersection as measured along the drill trace.<br>• Drill hole length is the distance from the surface to the end of the hole, as measured along the drill trace. |
| **Data aggregation methods** | • In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.<br>• Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade result, the procedure used for aggregation should be stated and some typical examples of such aggregations should be shown in detail.<br>• The assumptions used for any reporting of metal equivalent values should be clearly stated. | • No high grade cuts have been applied to assay results. RC assay results are distance weighted using 1m for each assay. Drill core intersection results are distance weighted to their matching assay results using the downhole width of the relevant assay interval.<br>• The assay intervals are reported as down hole length as the true width variable is not known.<br>• Intersections are reported above 0.3% Cu grade and can contain up to 2m of low grade or barren material.<br>• Intervals less than 3 metres are not included if less than 1% Cu.<br>• Assays rounded to 2 decimal places.<br>• Intervals of no sample return are given a |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | Cu and Co grade of zero.<br>• No metal equivalent reporting is used or applied. |
| **Relationship between mineralisation widths and intercept lengths** | • These relationships are particularly important in the reporting of Exploration Results.<br>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.<br>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). | • The majority of drilling is oriented approximately orthogonal to the known orientation of mineralization. However, the intersection width is measured down the hole trace and may not be the true width.<br>• All drill results are downhole intervals only due to the variable orientation of the mineralisation. |
| **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 limited to a plan view of drill hole collar locations and appropriate sectional views. | • Has been provided with the previous announcement of the resources. |
| **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. | • Drillholes completed during 2013 with no significant results are indicated in Table 2.<br>• All RC and DD drill holes prior to 2013 and forming the basis of the Mineral Resource estimate have been reported previously. |
| **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. | • No other exploration data is considered meaningful and material to this announcement. |
| **Further work** | • The nature and scale of planned further work (eg tests for lateral extensions of depth extensions or large-scale step-out drilling).<br>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling area, provided this information is not commercially sensitive. | • Future exploration may involve the drilling of more drill holes, both DD and RC, to collect additional detailed data on the known mineralized zones and also test for extensions to mineralization. |

**Section 3 Estimation and Reporting of Mineral Resources**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Database integrity** | • Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.<br>• Data validation procedures used | • Database is maintained by CSA Global who compile all data files on behalf of Tiger Resources.<br>• Cube completed validation checks on the database comparing collar points to the topography, maximum hole depths checks between tables and the collar data. Cube also verified the data using |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | visual inspection of the drillholes in 3D to identify inconsistencies of drill hole traces. |
| **Site visits** | • Comment on any site visits undertaken by the Competent Person and the outcome of those visits.<br>• If no site visits undertaken indicate why this is the case. | • The Competent Person has completed a number of site visits to the Kipoi project and the most recent during August 2013. |
| **Geological interpretation** | • Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.<br>• Nature of the data used and of any assumptions made.<br>• The effect, if any, of alternative interpretations on Mineral Resource estimation.<br>• The use of geology in guiding and controlling Mineral Resource estimation<br>• The factors affecting continuity both of grade and geology. | • The geological confidence is good however re-logging of some drillholes completed during the early stages of exploration may assist in geology modelling.<br>• The lithological description for all drilling is logged and stored within the drillhole database. This has been used for 3 dimensional lithological domaining. The underlying breccia ("Breche Heterogene") has a soft, talc calcareous matrix which hosts sub-angular, partly rounded clasts of grey and purple calcareous siltstones This lithology does not typically host mineralisation and has been used to guide the mineralised outlines in parts.<br>• The weathering characteristics for all RC and DD drilling are geologically logged. In addition, sulphur (%) is recorded as part of the assay suite. Both of these data have been used in the development of the Base of Oxidation and Top of Fresh geological domains.<br>• Drillhole grade data was used to develop mineralised outlines. The outlines were modelled to a nominal grade cut-off of approximately 0.3% Cu. The outlines were modelled with allowance for secondary re-mobilisation of copper. |
| **Dimensions** | • The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource. | • The Mineral Resource contains 2 mineralised areas with an overall strike length of approximately 950m. Mineralised widths vary from a 5m metres up to 140metres wide. Mineralisation extends from surface to approximately 250 metres below surface. |
| **Estimation and modeling techniques** | • The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. | • The estimation of Copper and Cobalt was undertaken using Ordinary Kriging of 5 metre downhole composited drilling data into a three dimensional block model of panel size 25m x 25m x 5m. A further process of Localised Uniform Conditioning (LUC) was applied to Copper to produce a model suitable for reporting above grade cut-offs and for mine planning based on a selective mining unit (SMU) of 5m x 5m x 2.5m and a selection of grade cut-offs. The |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | • The availability of check estimate, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.<br>• The assumptions made regarding recovery of by-products.<br>• Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).<br>• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.<br>• Any assumptions behind modeling of selective mining units.<br>• Any assumptions about correlation between variables.<br>• Description of how the geological interpretation was used to control the resource estimates.<br>• Discussion of basis for using or not using grade cutting or capping.<br>• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. | LUC has also incorporated an Information Effect correction to allow for some effect of incomplete information on the local recoverable model result.<br>• No top-cuts were applied to the 5 metre downhole composites for Copper or Cobalt as it was deemed not necessary.<br>• Estimation was constrained to within the modelled copper outlines. Estimates were based on minimum number of composites set at 6 and maximum number of composite set at 32. Maximum search ellipse was 250 metres. Istatis version 2013.3 and Surpac version 6.3 was used for the estimation.<br>• No by-product recoveries were considered.<br>• Minor elements including Calcium, Sulphur, Magnesium, Manganese and Iron were estimated.<br>• No correlation between elements was investigated.<br>• Block model validation was undertaken using the comparison of model data to drill hole data. Reconciliation during mining has been completed at least annually and shows good correlation between Mineral Resource and mine production. |
| **Moisture** | • Whether the tonnages are estimated on a dry basis or with natural moisture content. | • Moisture was not considered in the density assignment. |
| **Cut-off parameters** | • The basis of the adopted cut-off grade(s) or quality parameters applied. | • Cut-off grades for reporting of 0.5% copper were used in line with other resources in the area. |
| **Mining factors or assumptions** | • Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as port of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made. | • Open Pit mining is currently underway at Kipoi Central. Extensions to mineralisation are likely to extend the open pit mining operation. Minimum mining widths are approximately 5 metres and no external mining dilution has been applied to the resource model. |
| **Metallurgical factors or assumptions** | • The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of | • Numerous metallurgical test work has been completed at Kipoi Central (2009, 2011, and are still on-going) which is supported by the current mining |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. | activities. |
| **Environmental factors or assumptions** | • Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. | • No assumptions were made regarding environmental restrictions. |
| **Bulk density** | • Whether assumed or determined. If assumed, the basis for the assumptions. If determines, the method used, wther wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.<br>• The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.<br>• Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. | • Bulk density is routinely measured from diamond core on site by the local field staff. The method used is the typical immersion method where dried core samples are weighed in and out of water. The core is coated in wax when the core is deemed porous by the field staff.<br>• Bulk density values have also been obtained from in-pit measurements at Kipoi Central.<br>• The final bulk density was applied based on a combination of the diamond core and in-pit measurements and has been assigned according to oxidation state and lithology. |
| **Classification** | • The basis for the classification of the Mineral Resources into varying confidence categories.<br>• Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal | • All the resources for Kipoi Central are classified as Measured, Indicated or Inferred.<br>• The Measured Mineral Resources only include mineralisation defined by close spaced grade control drilling.<br>• Indicated Mineral Resources are outside the grade control limits but typically defined by resource definition with a |

| Criteria | JORC Code explanation | Commentary |
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| | values, quality, quantity and distribution of the data).<br>• Whether the result appropriately reflects the Competent Person's view of the deposit. | nominal spacing of at least 50 x 50m.<br>• Inferred Mineral Resources are defined by data density greater than 50m x 50m spaced drilling and confidence that the continuity of geology and mineralisation can be extended along strike and at depth.<br>• The Mineral Resource estimate appropriately reflects the Competent Person's view of the deposit. |
| **Audits or reviews** | • The results of any audits or reviews of Mineral Resource estimates. | • The Mineral Resource wireframes have been reviewed by site personnel and other qualified professionals in Cube. |
| **Discussion of relative accuracy/confidence** | • Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource 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 resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.<br>• 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.<br>• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. | • Given the 50m x 50m spaced drilling the variogram for copper is limited to this spacing. This generates a low confidence in the estimate. The low nugget effect will generate block estimates that are highly influenced by composites near the blocks. The benefit of OK is it inherently assists in declustering the data during the estimate. The variogram for cobalt contains more lags before reaching the sill, giving more confidence in the cobalt variogram and estimate.<br>• The mineral resources constitute a local resource estimate. All Measured and Indicated Mineral Resources would be available for economic evaluation.<br>• Production data and reconciliation undertaken between mining and Mineral Resources indicate good correlation with what has been mined and the estimates completed. |

## Section 4 Estimation and Reporting of Ore Reserves

| Criteria | JORC Code explanation | Commentary |
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| **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.<br>• Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore reserves. | • The Ore Reserve Estimate has been based on the Kipoi Central Mineral Resource estimate updated as at November 2013 with resource estimation carried out by Cube Consulting Pty Ltd (Cube). This resource update incorporated new exploration drilling and new grade control drilling information. The Competent Person for the reporting of this Mineral Resource is Mark Zammit.<br>• The Mineral Resources have been reported inclusive of the Ore Reserves estimated and stated here. |
| **Site visits** | • Comment on any site visits undertaken by the Competent Person and the outcome of those visits.<br>• If no site visits undertaken indicate why this is the case. | • The Competent Person undertook a site visit to the Kipoi Project during February 2012. During the site visit, current mining operations at the Kipoi Central stage 1 pit were observed, this included ore and waste mining, ROM pad operations as well as the operation of the DMS processing facility. |
| **Study status** | • The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.<br>• The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to 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. | • An existing Open Pit mine has been operating in the past 3 years. Feasibility Study work was conducted in 2012 towards defining the Kipoi Central Stage 2 Ore Reserves and determining appropriate mine plan considering applicable Modifying factors. Modifying factors used in the determination of these Ore Reserves have been compiled using a combination of feasibility study level investigations and more importantly, actual production figures from the operating mine and processing facility, providing a high level of confidence in the estimation process. |
| **Cut-off parameters** | • The basis of the adopted cut-off grade(s) or quality parameters applied. | • The cut-off grades used in the estimation of these Ore Reserves is the non-mining, break-even copper grade taking into account metallurgical recovery, site operating costs, royalties and revenues. Single cut-off grades were defined by material type due to varying of treatments costs and recoveries by material. |
| **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 | • Pit Optimisations were carried out from which a series of shells at varying revenue factors was generated. Detailed pit designs were completed from the selected shell. These design(s) will be a cut-back to |

| Criteria | JORC Code explanation | Commentary |
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| | optimization or by preliminary or detailed design).<br>• The choice, nature and appropriateness of the selected mining method (s) and other mining parameters including associated design issues such as pre-strip, access, etc<br>• The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling<br>• The major assumptions made and Mineral Resource model used for pit and stope optimization (if appropriate)<br>• The mining dilution factors used.<br>• The mining recovery factors used.<br>• Any minimum mining widths used.<br>• The manner in which Inferred Mineral Resources are utilized in mining studies and the sensitivity of the outcome to their inclusion<br>• The infrastructure requirements of the selected mining methods | the existing/operating Stage 1 pit design.<br>• The current mining operations have been ongoing for 3 years. The selective open pit mining with close spaced grade control drilling has provided a very good reconciliation with the Resource model. Density determinations and quality control procedures developed have proven to provide adequate control. The reserves have been developed after consideration of current practices.<br>• Pit slope angles were based on geotechnical studies conducted by George, Orr and Associates, and reported in October 2012, and in conjunction with previous pit designs completed as part of the iterative planning process. The availability of the latter was useful to provide an insight into likely ramp configurations to achieve access to the pit bottom and as such a more informed pit wall angle could be used. The overall wall angles used was 30 degrees. Current mining practices include on-going assessment of geotechnical conditions as part of the mine's ground control management plan.<br>• The Kipoi Central Mineral Resource estimate updated as at November 2013 with resource estimation carried out by Cube Consulting Pty Ltd (Cube) was used as the basis for the pit optimisation.<br>• This is a recoverable resource model and as such no further mining dilution was applied.<br>• This is a recoverable resource model and as such no further mining recovery factors were applied.<br>• A minimum mining width of 30m was used as a guide in the design process. This was however of minimal consequence as the two stage development of this pit had mostly large bench widths available for mining.<br>• No inferred material was included in the conversion of Mineral Resource to Ore Reserves. All inferred material was treated as waste in the planning and evaluation process.<br>• The current mining operations utilize a mining contractor, contracted laboratory and in-house expertise to manage the efficient exploitation of the mineral resources. |

| Criteria | JORC Code explanation | Commentary |
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| | | Accommodation, messing, survey, mine planning, laboratory and all necessary infrastructure has been established during the past 3 years |
| **Metallurgical factors or assumptions** | • The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.<br>• Whether the metallurgical process is well-tested technology or novel in nature.<br>• The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical factors applied.<br>• Any assumptions or allowances made for deleterious elements.<br>• 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.<br>• For minerals that are defined by specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? | • A proposed Heap/Agitated Leach SX-EW process is proposed following conclusive metallurgical test work programme to determine the suitability of the extraction process. David Readett conducted in-depth study of the metallurgical recovery factors based on sampling and testwork programme. Following the above programme, average recoveries based on material oxidation were determined as follows;<br>Oxide – 84.1%<br>Transition – 82.1%<br>Fresh/Sulphide – 66.6%<br>• The proposed Heap/Agitated Leach SX-EW process is well tested technology.<br>• In consultation with Cube geologist it was possible to establish from existing drill core a representative sample of Fresh/Sulphide material. An additional 3 samples of Fresh/Sulphide material were also received in April 2013 from the current Kipoi Central Stage 1 pit.<br>• There is pyrite present in all samples. Pyrite represents less than 0.5% of total ore mass (0.17% to 0.37%) and less than 10% of the total sulphide sulphur present (6% to 8%) for the Lix samples. The Kipoi Stage II Fresh ore sample contained 0.48% Pyrite representing 6% of total sulphide sulphur present. There was no relevance for inclusion of allowances for deleterious elements.<br>The samples contained a high percentage of sulphide sulphur – the sulphur that exists as part of the matrix of sulphide minerals and which via oxidation can be mobilised to generate sulphuric acid – ranging from 1.5 to 4.2% of the total ore mass. No pilot scale test work was undertaken as part of this work.<br>• Yes. The test work resulted in recovery and cost estimates by mineralogy which were applied accordingly. |
| **Environmental** | • The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock | • The environmental impact assessment has been completed and approved by the local authorities. The waste rock is dominated by |

| Criteria | JORC Code explanation | Commentary |
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| | characterization 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. | limestone hosted minerals and is expected to be inert. The closure plan and rehabilitation plan details the establishment of economic farm lots for long term cashflow generation for the local community. |
| **Infrastructure** | • The existence of appropriate infrastructure: 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. | • The mine has been operating for 3 years and all necessary support infrastructure has been built and continues to operate providing adequately for the infrastructure requirements of the mine. |
| **Costs** | • The derivation of, or assumptions made, regarding projected capital costs in the study.<br>• The methodology used to estimate operating costs.<br>• Allowances made for the content of deleterious elements.<br>• The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.<br>• The source of exchange rates used in the study.<br>• Derivation of transportation charges.<br>• The allowances made for royalties payable, both Government and private | • The derivation of, or assumptions made, regarding projected capital costs in the study. The capital costs for the development will be met by the completed funding plan, including cash from existing operations and debt funding from secured and unsecured banks<br>• Mining Operating costs were sourced from on-going mining contract schedule of rates and made up of Load & Haul, Drill and Blast, fuel cost and a fixed management fee. These costs were deemed reasonable for an operation of such size. Mining costs averaged $4.50/t.<br>The non-mining operating costs have been estimated using existing operations for corporate administration, environmental and social programs while the SXEW operating cost has been estimated from first principals using proven industry practices.<br>• No allowance has been made for deleterious materials other than those identified in the environmental study that have been fully assessed and costs incorporated into the analysis.<br>• The operation assumes revenues from sales of copper only. The forward projection of copper price has been based on the average cost of the top 20 debt providers for the copper mining space as provided by Macquarie Bank research.<br>• All costs have been developed in United States Dollars where possible. The exchange rates used for local supply and regional supply have been based on recommendations by Macquarie Bank research. |

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| | | • Transport delivery and marketing costs have been provided by the preferred contract for these services.<br>• The statutory state charges have been included in the financial model as advised by Price Waterhouse Copper and audited by our debt funding providers. |
| **Revenue Factors** | • The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity prices(s), for the principal metals , minerals and co-products. | • No factors were applied in the application of the metal prices stated in the above section. The head grades as reported in these estimates were not factored. Mining dilution and mining recovery factors were not applied on the resource model, as the mineral resource estimation method results in a recoverable model hence no additional dilution or mining recovery factors have been applied. |
| **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.<br>• A customer and competitor analysis along with the identification of likely market windows for the product.<br>• Price and volume forecasts and the basis for these forecasts.<br>• For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. | • The market remains strong for copper with current pricing and future projected prices exceeding the historical price.<br>• The copper will be sold under an offtake agreement where the off-taker undertakes to buy all copper for the first 100,000 tonnes sold or completed within 4 years.<br>• The price expected is based on analysis of debt service providers throughout the copper debt business space. The market is generally considered to be expanding in line with production.<br>• Not applicable. |
| **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.<br>• NPV ranges and sensitivity to variations in the significant assumptions and inputs. | • The economic and fiscal input parameters to complete the economic analysis have been audited and found correct by the debt facility provider. The physical and cost data have been similarly audited.<br>• The NPV was stress tested for a range of copper prices, recoveries, cost scenarios and the economic remain robust under the conditions tested. |
| **Social** | • The status of agreements with key stakeholders and matters leading to social license to operate. | • The social license is in good standing with ongoing monthly community meetings key social projects being delivered and positive feedback from community leaders. |
| **Other** | • To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: | • None identified<br>• All legal agreements have been executed and audited, all commercial agreements have been executed and audited |

| Criteria | JORC Code explanation | Commentary |
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| | • Any identified material naturally occurring risks.<br>• The status of material legal agreements and marketing arrangements.<br>• 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. | • The government has approved the project development. |
| **Classification** | • The basis for the classification of the Ore Reserves into varying confidence categories.<br>• Whether the result appropriately reflects the Competent Person's view of the deposit.<br>• The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). | • All in-pit reported Ore Reserves which have been reported as Proven have been derived directly from the Mineral Resource classified at the Measured level of confidence.<br><br>All in-pit reported Ore Reserves which have been reported as Probable have been derived directly from the Mineral Resource classified at the Indicated level of confidence.<br><br>No inferred material was included in the conversion of Mineral Resource to Ore Reserves. All inferred material was treated as waste in the planning process.<br>• The Competent Person is satisfied that the estimated Ore Reserves as stated here reflect his view of the deposit.<br>• None of the Probable Ore Reserves stated here were derived from Measured Mineral Resources. |
| **Audits or Review** | • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). | • The debt funding provider has audited the Ore Reserves and found them to have been completed in a professional manner with a high level of confidence. |
| **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 | • In estimating these Ore Reserves, the confidence level as expressed in the Mineral Resource estimates have been accepted in the respective resource classification categories. Confidence in this conclusion is based on observance of results of three years of mining of this deposit |

| Criteria | JORC Code explanation | Commentary |
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| | 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.<br>• 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.<br>• 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.<br>• It is recognized that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available | as part of the stage 1 development.<br>• The Ore Reserves estimate relates to global estimates in the conversion of Mineral Resources to Ore Reserves, due largely to the spacing of the drill data on which the estimates are based, relative to the intended local selectivity of the mining operations.<br>• Due to the advanced stage of the first phase of the project with mining and ore processing having taken place over the past 3years, the modifying factors applied in the estimation of the Ore Reserves are considered to be of a sufficiently high level of confidence not to have a material impact on the viability of the estimated Ore Reserves.<br>• The mining operations have been ongoing for 3 years. The grade control reconciliation has been good when compared to the resource models. As over 2.5Mt of ore has been processed, there is significant data set to validate the estimation methods adopted and have found good reconciliation. |