

ASX Announcement

ASX Code: RVR

11 February 2015

Thalanga Project – Updated Mineral Resource Estimate

Highlights

- Red River delivers JORC 2012 Resource estimate for the Thalanga Project (West 45, Orient and Thalanga Far West) of 2.3Mt @ 14.3% Zinc Equivalent
- 100% increase in total resource tonnage from previous historical estimates for Thalanga Project
- Resource estimates for West 45 and Orient deposits completed in accordance with the JORC Code (JORC 2012) and supersedes previously published JORC 2004 resource estimates – no change in tonnage or grade
- Work progressing on updating previously published JORC 2004 resource estimates for Liontown and Waterloo deposits
- Thalanga production restart study on track for completion during Q2 2015

Zinc developer Red River Resources Ltd (“Red River” or the “Company”) is pleased to announce updated mineral resource estimates for the West 45 and Orient deposits, part of its Thalanga Project, 60km south-west of Charters Towers in Central Queensland.

The material increase in resource base will underpin the planned restart of production at Thalanga by the end of calendar year 2015 and give the Company confidence that the mine life of Thalanga can be extended.

Table 1 Combined Thalanga Operations Mineral Resource Estimate

Resource Class	Tonnage (kt)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Zn Eq. (%)
Measured	73	1.8	1.6	5.3	0.2	41	13.7
Indicated	1,575	1.0	2.4	7.2	0.2	52	14.0
Inferred	641	1.6	2.1	6.6	0.3	56	15.2
Total	2,289	1.2	2.3	6.9	0.2	53	14.3

Tonnages and grades are rounded. Discrepancies in totals may exist due to rounding.

Zinc equivalent (Zn Eq) has been calculated using the metal selling prices, recoveries and other assumptions contained in Table 3 of this announcement. It is Red River’s opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold.

The resource estimates for these deposits have been classified in accordance with the JORC Code (JORC 2012) and supersede the previously published JORC 2004 resource estimates for West 45 (30 June 2011) and Orient (30 June 2011). The resource estimates, based on historical data, were independently completed by Mining One Consultants Pty Ltd (Mining One) in January 2015. West 45, Thalanga Far West and Orient are located as per Figure 1. The combined Thalanga Operations Mineral Resource Estimate is broken down on a deposit by deposit basis as per Table 2.

Figure 1 Stylised Thalanga Long Section

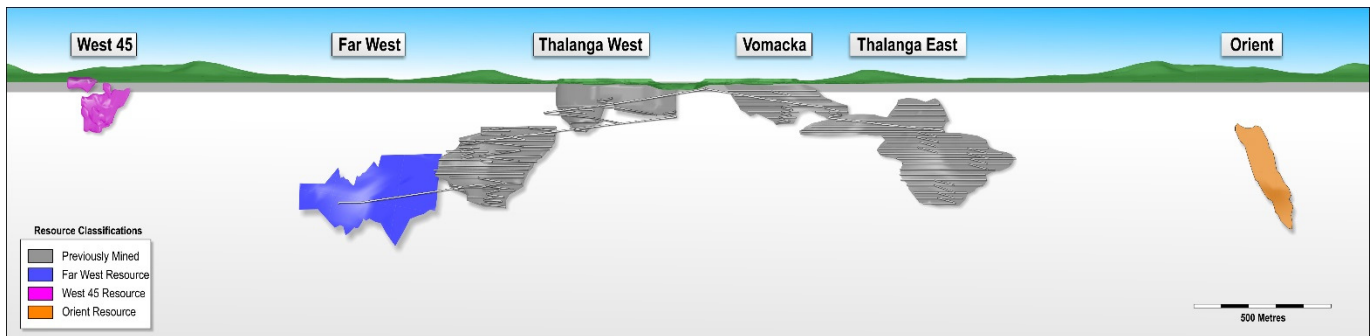


Table 2 Thalanga Operations Mineral Resource Estimate by Deposit

Project	Resource Class	Tonnage (kt)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Zn Eq. (%)
West 45⁽¹⁾	Measured	-	-	-	-	-	-	-
	Indicated	585	0.6	3.6	8.3	0.3	70	15.3
	Inferred	6	0.9	0.8	3.7	0.1	15	7.8
	Sub Total	591	0.6	3.5	8.3	0.3	69	15.2
Thalanga Far West⁽²⁾	Measured	73	1.8	1.6	5.3	0.2	41	13.7
	Indicated	494	1.6	1.6	5.3	0.2	40	13.0
	Inferred	591	1.7	2.1	6.3	0.3	57	15.2
	Sub Total	1,158	1.7	1.9	5.8	0.2	49	14.4
Orient⁽³⁾	Measured	-	-	-	-	-	-	-
	Indicated	496	0.9	1.8	7.7	0.2	44	13.4
	Inferred	44	0.8	1.8	10.9	0.2	46	16.2
	Sub Total	540	0.9	1.8	7.9	0.2	44	13.6
Thalanga Project	Measured	73	1.8	1.6	5.3	0.2	41	13.7
	Indicated	1,575	1.0	2.4	7.2	0.2	52	14.0
	Inferred	641	1.6	2.1	6.6	0.3	56	15.2
	Total	2,289	1.2	2.3	6.9	0.2	53	14.3

Tonnages and grades are rounded. Discrepancies in totals may exist due to rounding.

Zinc equivalent (Zn Eq) has been calculated using the metal selling prices, recoveries and other assumptions contained in Table 3 of this announcement. It is Red River's opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold.

(1) Stuart Hutchin, Mining One Consultants, 31 Jan 2015, (2) Resource Estimation of the Thalanga Far West Deposit, Mining One Consultants, 21 January 2015, (3) Stuart Hutchin, Mining One Consultants, 31 Jan 2015

Zinc equivalent (Zn eq) calculation parameters are listed in Table 3. The metallurgical recoveries are derived from historical metallurgical recoveries from the Thalanga deposit and test work carried out. The West 45 and Orient deposits are related to and of a similar style of mineralisation to Thalanga and it is appropriate to apply similar recoveries. It is Red River's opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold.

Table 3 Zinc Equivalent Calculation Factors

Metal	Price	Unit	Recoveries	Zn Eq. Factors
Copper	US\$3.00	US\$/lb	80%	3.3
Lead	US\$0.90	US\$/lb	70%	0.9
Zinc	US\$1.00	US\$/lb	88%	1.0
Gold	US\$1,200	US\$/oz	15%	0.05
Silver	US\$17.00	US\$/oz	65%	0.025
FX Rate: A\$0.85:US\$1				

1. West 45

Red River engaged independent mining consultants Mining One to conduct a review of the previous mineral resource estimate for the West 45 deposit and to restate the resource estimate in compliance with the JORC Code (JORC 2012).

The estimates have been classified as Indicated and Inferred Mineral Resources in accordance with the JORC Code (JORC 2012) and supersede the previously published JORC 2004 resources estimates for the West 45 deposit (30 June 2011). The updated Mineral Resource for the West 45 deposit is reported below in Table 4. Please refer to the West 45 Appendix for the full disclosure as per the JORC Code (2012 Edition).

Table 4 West 45 Resource

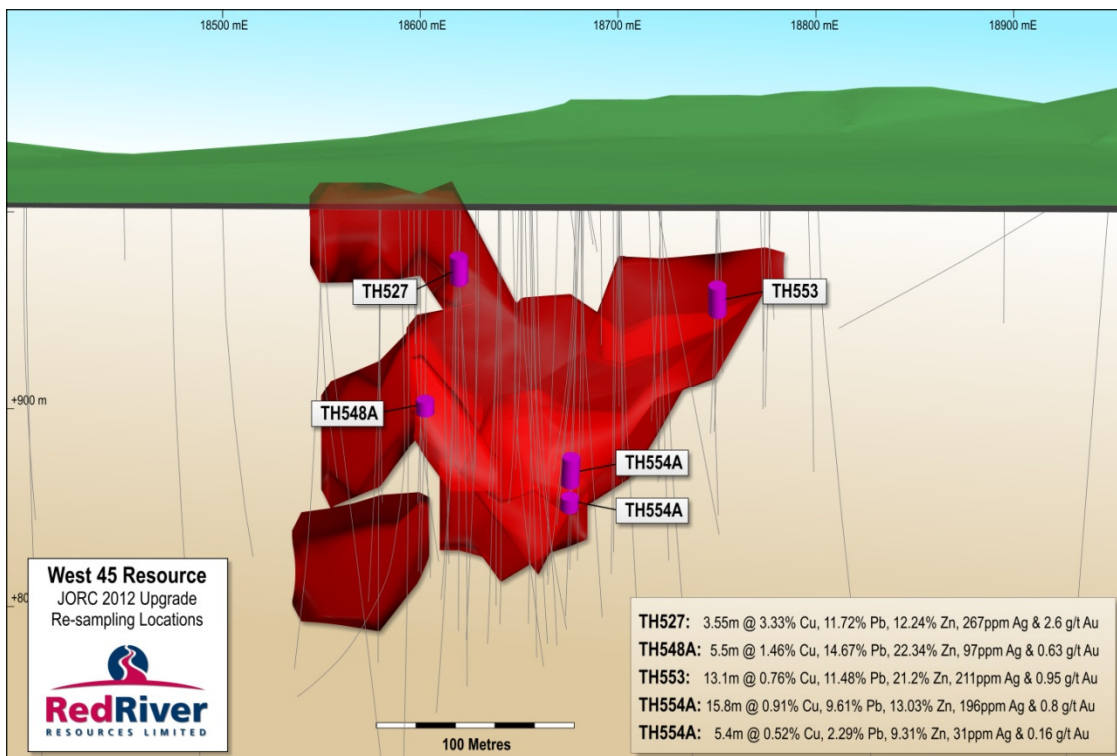
Resource Class	Tonnage (kt)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Zn Eq. (%)
Measured	-	-	-	-	-	-	-
Indicated	585	0.6	3.6	8.3	0.3	70	15.3
Inferred	6	0.9	0.8	3.7	0.1	15	7.8
Total	591	0.6	3.5	8.3	0.3	69	15.2

Source: Mining One Consultants, 31 Jan 2015

Tonnages and grades are rounded. Discrepancies in totals may exist due to rounding.

Zinc equivalent (Zn Eq) has been calculated using the metal selling prices, recoveries and other assumptions contained in Table 3 of this announcement. It is Red River's opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold.

Figure 2 West 45 Re-sampling Locations



2. Orient

Red River engaged independent mining consultants Mining One to conduct a review of the previous mineral resource estimate for the Orient deposit and to restate the resource estimate in compliance with the JORC Code (JORC 2012).

The estimates have been classified as Indicated and Inferred Mineral Resources in accordance with the JORC Code (JORC 2012) and supersede the previously published JORC 2004 resources estimates for the Orient deposit (30 June 2011). The updated Mineral Resource for the Orient deposit is reported below in Table 4. Please refer to the Orient Appendix for the full disclosure as per the JORC Code (2012 Edition).

Table 5 Orient Resource

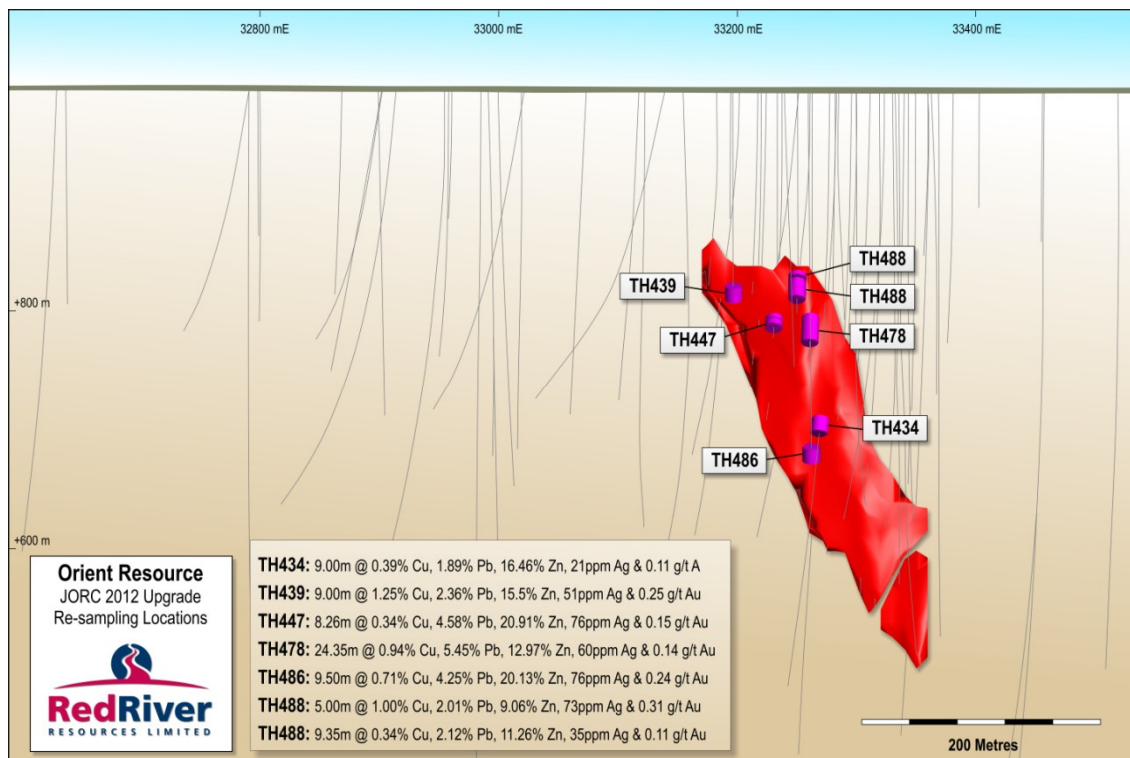
Resource Class	Tonnage (kt)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Zn Eq. (%)
Measured	-	-	-	-	-	-	-
Indicated	496	0.9	1.8	7.7	0.2	44	13.4
Inferred	44	0.8	1.8	10.9	0.2	46	16.2
Total	540	0.9	1.8	7.9	0.2	44	13.6

Source: Mining One Consultants, 31 Jan 2015

Tonnages and grades are rounded. Discrepancies in totals may exist due to rounding.

Zinc equivalent (Zn Eq) has been calculated using the metal selling prices, recoveries and other assumptions contained in Table 3 of this announcement. It is Red River's opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold.

Figure 3 Orient Re-sampling Locations

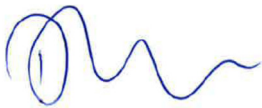


Forward Program

Red River is currently working to complete the West 45 / Thalanga restart study, which is expected to be completed during Q2 2015. Red River has also commenced work with Mining One on the Thalanga Far West scoping study, starting with the initial mine designs for the resource.

In addition, work has commenced on a detailed review of the historical drilling at Thalanga, and also a review of the historical resources remaining from the closure of Thalanga in 1998, seeking to identify potential targets that could be accessed from any development associated with the proposed development of Thalanga Far West.

On behalf of the board



Donald Garner
Managing Director
Red River Resources Limited

End.

For further information please visit Red River's website www.redriverresources.com.au or contact us:

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Competent Person Statement

The information in this report that relates to the estimation and reporting of the West 45 and Orient Resources is based on and fairly represents, information and supporting documentation compiled by Mr Stuart Hutchin who is a Member of The Australasian Institute of Mining and Metallurgy, Member of the Australian Institute of Geoscientists and a full time employee of Mining One Consultants Pty Ltd.

Mr Hutchin has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'.

JORC Code, 2012 Edition – Table 1 (WEST 45 Deposit)

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling (eg 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 (eg ‘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 (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> The deposit was primarily sampled via half core samples based on geological considerations within diamond drill holes drilled on a 20m x 20m pattern through the project area. The holes were orientated to ensure drill intersections were approximately perpendicular to the dip and strike of the ore lenses and overall geological package. Diamond core and reverse circulation drill samples were crushed and assayed for Cu, Pb, Zn, Ag, Fe and Au via Atomic Absorption Spectrum (AAS) for the base metals and fire assay with an AAS finish for gold.
Drilling techniques	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> A total of 71 diamond holes have been drilled in the West 45 project area, of these a total of 47 diamond holes have been used to estimate resources for the project. The diamond core size drilled was predominately with standard tube NQ2 sized core. All diamond core was orientated. In addition to the diamond drilling a total of 10 reverse circulation holes were drilled within the project area with 6 of these used during the estimation of the resources.
Drill sample recovery	<ul style="list-style-type: none"> 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 and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	<ul style="list-style-type: none"> The diamond core drill recovery was monitored using a combination of the drillers run sheets, core block markings and manual piecing together of core and measurement by Kagara Geologists and Field Assistants in the core processing facility. Any core loss was noted within the logging sheets. The majority of the resource is based on diamond drilling, the deposit predominately consists of zinc and copper mineralization, there are no concerns regarding loss of fine

Criteria	JORC Code explanation	Commentary
		material during the core sampling process for this deposit.
Logging	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> All diamond core and reverse circulation chips were logged for geological and geotechnical characteristics. Rock type, alteration style and sulphide mineral content were logged by a site geologist. The logging was sufficient to enable creation of detailed geological model that supports the resource estimate. Core photographs are taken of each core tray and stored as part of the resource database dataset.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> NQ2 sized diamond core was marked up and cut in half with a diamond core saw. The right side of the core as sampled according to the geological intervals selected by the site Geologist. The RC samples were poured through a riffle splitter after the sample was circulated from the drill face through a cyclone and into a large plastic bag. The methodology of selecting half core via geological intervals guarantees that the core samples are representative. The reverse circulation drilling samples are collected on 1m intervals so there is no selectivity bias with these. The sample sizes vary from material sourced from the core samples given the varying sample lengths. The RC samples are generally 5-10 kg. The sample sizes are appropriate given the relatively even distribution of base metal grades within the deposit
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> 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. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> The ALS laboratory completed internal standard and duplicate samples. 30 pulp residues were sent to the onsite laboratory. Results of these samples showed strong correlation with the original samples for all base metals except Pb. Since the Pb content of the resource is not material this is not deemed to detract from the quality of the assay dataset. Resampling of 79 quarter core samples was completed in January 2015. Results showed an overall correlation coefficient of 0.82 for all metals. The program has added further verification to the original assay dataset.

Criteria	JORC Code explanation	Commentary
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <i>The verification of significant intersections by either independent or alternative company personnel.</i> <i>The use of twinned holes.</i> <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i> <i>Discuss any adjustment to assay data.</i> 	<ul style="list-style-type: none"> Holes are drilled to within 10m of each other in some areas of the deposit, the assay data in these holes is consistent through the mineralized zones. Data was entered into a central database and then validated by a series of validation checks to ensure erroneous data was not saved into the resource database.
<i>Location of data points</i>	<ul style="list-style-type: none"> <i>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.</i> <i>Specification of the grid system used.</i> <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> The Thalanga mine grid was extended to cover the West 45 deposit. All holes were surveyed using the Thalanga site survey team who used a differential GPS survey system. The topography surface is represented by a wireframe file that has been edited over time by the site survey team. The surface covers the complete West 45 deposit area. The surface is an accurate representation of the actual topographic surface at the site.
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <i>Data spacing for reporting of Exploration Results.</i> <i>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.</i> <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> The West 45 deposit has been drilled on an average spacing of 20m x 20m in the main resource area and down to 10m x 10m in some places. This drill spacing provides evidence of mineralized zone continuity for the purposes of resource estimation. No sampling compositing was necessary in the initial diamond drilling however compositing of raw assay data was completed in preparation for the resource estimation process.
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i> 	<ul style="list-style-type: none"> The majority of diamond holes were orientated to provide an approximate perpendicular intersection angle with the main mineralized zones. No sampling bias is assessed as been caused by the orientation of the drilling orientation.
<i>Sample security</i>	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> Samples were supervised by either the drill crew, field assistant or geologist and at all times. Given the base metal nature of the deposit sample security was no assessed as a significant risk.
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> A review of the assay data was completed by Sheperd 1997. A due diligence review of the resource estimation was completed by Mining One Consultants was completed in November 2013.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No agreements or joint ventures are attributed to the Mining lease covering the West 45 deposit . No joint ventures exist over the property however a 4% NSR is payable to Thalanga Copper Mines in addition to the standard Queensland government royalty. The license area is current.
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> RGC Thalanga Pty Ltd drilled the deposit between 1996-1998 and then Kagara Copper drilled the project between 2007-2011.
<i>Geology</i>	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> The deposit consists of stratiform sulphide lenses and stringer zones developed within quartz eye volcanoclastics located between a dacite hangingwall and rhyolite footwall.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> A list of each resource drillhole location and interval is located as an appendix to this table, see below.
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> 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. 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 	<ul style="list-style-type: none"> The exploration results reported for West 45 were included as weighted average assay intervals for Zn, Cu, Ag and Pb. No cutting of high grades was completed when reporting as exploration results

Criteria	JORC Code explanation	Commentary
	<p><i>shown in detail.</i></p> <ul style="list-style-type: none"> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>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').</i> 	<ul style="list-style-type: none"> The typical drill sample interval is 1m in length, the average thickness of the mineralized zone is 5m, there are no issues with reporting the results based on this. The drillholes intercepted the mineralized lenses at an approximately perpendicular angle. All exploration results were reported as downhole thicknesses.
<i>Diagrams</i>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> See Appendix 3 for a location plan of all drill collars used in the resource estimate.
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> All drill intercepts are listed in Appendix 2
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> Not Applicable
<i>Further work</i>	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> Mining has commenced within the deposit, some step out drilling will be completed from the underground workings.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
<i>Database integrity</i>	<ul style="list-style-type: none"> 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. Data validation procedures used. 	<ul style="list-style-type: none"> The survey, sampling and logging data was electronically imported into the resource database. Checks were also made of the original lab sample sheets and the database to ensure that transcription errors were not present. A visual check was also made of the drill traces, assay and logging data in the 3D environment of Surpac to ensure that results correlated between drillholes and were inline with the geological interpretation and mineralization continuity.
<i>Site visits</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> A site visit was completed by Stuart Hutchin on 16/10/2013 where West 45 core samples were inspected, the portal area viewed and general location of surface collars were confirmed.
<i>Geological interpretation</i>	<ul style="list-style-type: none"> Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	<ul style="list-style-type: none"> The confidence in the overall geological interpretation is high and has been confirmed by continued infill drilling from the underground workings and the actual orientation of the stoping blocks from within the mine. The dacite, quartz eye volcanoclastics and rhyolite geological units have been modelled and are used to define general areas of rock types within the deposit. The mineralized zones typically occur within the quartz eye volcanoclastics. The mineralized lenses occur within the quartz eye volcanoclastic package, they are discrete pods of massive sulphide and stringer mineralization, some fault control on these zones is evident that does cause termination of individual lenses.
<i>Dimensions</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The strike length of individual mineralized pods ranges from 40m to 240m, thickness of the zones ranges from 5m to 20m. The resource domains are located from 20m below the surface topography and extend to a depth of 250m.
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> The resource model was constructed using Surpac software. Mineralised domain wireframes were constructed using a nominal 5% Zn Eq boundary, these domains were used to constrain the estimate. A minimum domain thickness of 2m was used, this corresponds to the minimum practical mining width within an underground operation.

Criteria	JORC Code explanation	Commentary
	<p><i>of computer software and parameters used.</i></p> <ul style="list-style-type: none"> <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i> <i>The assumptions made regarding recovery of by-products.</i> <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i> <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i> <i>Any assumptions behind modelling of selective mining units.</i> <i>Any assumptions about correlation between variables.</i> <i>Description of how the geological interpretation was used to control the resource estimates.</i> <i>Discussion of basis for using or not using grade cutting or capping.</i> <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i> 	<ul style="list-style-type: none"> High grade Zn, Cu, Pb, Ag and Au were applied using the 95th percentile method. This cut up to 31 composites in Lens 1. No high grades were cut out of lenses 3, 4, 5 and 6 due to the lack of any significant high grade outliers in those populations. A composite file was created using an average composite length of 1m. The average sample length within the assay dataset is also 1m. Variograms were not created due insufficient quantity of sample pairs within the relatively small dataset, meaningful variograms were not created. An inverse distance estimate was run given the lack of variograms. This method was however deemed to be suitable given the style and orientation of the mineralization. The average Zn grade for zone 1 (largest component to the resource) is 8.3% Zn in comparison to the mean of the zone 1 composites of 8.92% Zn. The estimated Cu grade for zone 1 is 0.6% Cu in comparison to 0.61% Cu for the mean of the zone 1 composites.
Moisture	<ul style="list-style-type: none"> <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i> 	<ul style="list-style-type: none"> The resource tonnages have been estimated on a dry basis
Cut-off parameters	<ul style="list-style-type: none"> <i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i> 	<ul style="list-style-type: none"> A cut – off using 5% Zn Eq has been used to report resources. This was chosen as the lower limit of potentially economically extractable material within an underground mining operation in this style of deposit.
Mining factors or assumptions	<ul style="list-style-type: none"> <i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part 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.</i> 	<ul style="list-style-type: none"> The resources have been estimated using a minimum thickness of 2m for each of the domain shapes, this minimum thickness therefore accounts for any dilution in zones that are less than this thickness. The proposed mining method is via underground long hole stoping techniques, the model parameters are therefore deemed to be suitable for this type of potential mining operation.

Criteria	JORC Code explanation	Commentary
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of 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. 	<ul style="list-style-type: none"> The ore is planned to be crushed and a concentrate containing Zn, Pb, Ag and Cu produced, metallurgical test work has shown that a saleable concentrate can be produced from the West 45 ore. The ore will be processed at the existing Thalanga processing facility.
<i>Environmental factors or assumptions</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The tailings produced during the creation of the concentrate will be disposed of at the currently permitted Thalanga tailings facility. Waste rock from the mine will be placed on the existing waste dump locations. Approvals have been given for mining of the West 45 deposit by the Queensland State Government.
<i>Bulk density</i>	<ul style="list-style-type: none"> Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. 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. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	<ul style="list-style-type: none"> The bulk densities for the ore and waste rock types were estimated using the Archimedes method, that is (Dry Weight / (Dry Weight – Wet Weight)).
<i>Classification</i>	<ul style="list-style-type: none"> The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in 	<ul style="list-style-type: none"> The resources have been classified according to the drill density and the modelled continuity of both the thickness and grade of the mineralized zones in the view of the resource geologist. Only indicated and inferred blocks have reported for the resource, no measured blocks are reported.

Criteria	JORC Code explanation	Commentary
	<p><i>continuity of geology and metal values, quality, quantity and distribution of the data).</i></p> <ul style="list-style-type: none"> • <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i> 	<ul style="list-style-type: none"> • The resource classification is deemed appropriate in relation to the drill spacing and geological continuity of the mineralized domains.
Audits or reviews	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of Mineral Resource estimates.</i> 	<ul style="list-style-type: none"> • Mining One consultants completed a review of the West 45 resource as part of a due diligence program. No critical flaws were highlighted with the source data set or the modelling methodology however there were some deficiencies such as the limited QAQC programs during drilling and the lack of data to create variograms.
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> • <i>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.</i> • <i>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.</i> • <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i> 	<ul style="list-style-type: none"> • The resource estimate is deemed to be an accurate reflection of both the geological interpretation and tenure of mineralization within the deposit. Underground development commenced on the deposit where lens 1 was intersected as predicted by the resource model, the limited production grades achieved prior to the company going into administration were consistent with the reported resource grades for that area of the deposit. This provides confidence in the estimate.

WEST 45 APPENDIX 1

WEST 45 – DRILLHOLE COLLAR LOCATIONS

Hole_ID	X	Y	Z	Max_Depth	Azimuth	Dip
TH045	18590.41	20640.84	1027.5	534.71	181.5	-71
TH406	18595	20625	1028.5	804.71	180	-73
TH508	18721.03	20171.57	1025.62	403.01	20	-60
TH509	18700.74	20286.3	1031.58	307.01	20	-60
TH510	18654.48	20326.15	1032.89	291.31	20	-60
TH511	18655.24	20248.61	1029.02	360.01	20	-60
TH512	18620.42	20287.22	1030.15	327.51	20	-60
TH513	18612.15	20349.89	1032.44	240.01	20	-60
TH514	18646.01	20275.8	1030.03	300.81	20	-60
TH515	18699.81	20358.37	1037.25	200.01	20	-60
TH516	18579.99	20366.88	1031.54	210.2	20	-60
TH518	18650.97	20365.96	1035.03	200.01	20	-60
TH519	18700.83	20381	1039.39	138.01	20	-60
TH520	18696.93	20327.81	1034.69	251.01	20	-60
TH524	18616.92	20374.99	1034.59	177.01	20	-60
TH525	18549.47	20301.51	1028.12	323.81	20	-60
TH526	18549.46	20199.57	1025.46	481.01	20	-60
TH527	18617.21	20363.25	1033.94	192.01	20	-60
TH528	18652.44	20299.95	1031.69	290.01	20	-60
TH530	18650.33	20347.7	1034.23	210.86	20	-60
TH536	18617.86	20259.14	1028.99	315.01	20	-60
TH537	18617.47	20317.24	1031.49	270.31	20	-60
TH538	18700.1	20345.77	1035.76	201.9	20	-60
TH541	18680.87	20335.78	1034.51	243.41	18	-61
TH542	18640.06	20334.28	1033.2	267.31	18	-61
TH543	18721.1	20337.69	1035.98	204.01	18	-60
TH544	18950	20600	1020	800.01	193	-71
TH545	18600.13	20323.84	1030.97	252.01	18	-61
TH546	18600.09	20355.78	1032.52	207.01	18	-61
TH547	18640.77	20312.91	1032.02	276.51	18	-61
TH548	18600.27	20304.26	1029.95	69	18	-60
TH548A	18603.15	20304.04	1031.34	246	18	-60
TH549	18679.75	20355.64	1036.16	225.21	18	-60
TH550	18680.66	20312.76	1033.18	249.21	18	-61
TH551	18719.89	20313.15	1034.01	242.01	18	-61
TH552	18719.84	20361.93	1038.05	170.01	18	-61
TH553	18750.49	20346.18	1037.44	180.01	18	-61
TH554	18680.67	20296.79	1032.03	60	18	-62
TH554A	18680.48	20292.8	1031.75	279.21	18	-62

Hole_ID	X	Y	Z	Max_Depth	Azimuth	Dip
TH555	18599.98	20273.55	1028.87	246	18	-62
TH556	18775.07	20353.64	1037.99	160.01	18	-62
TH557	18775.43	20357.3	1038.44	123.2	18	-52
TH558	18640.69	20291.99	1031.14	279.01	18	-61
TH560	18580.02	20315.69	1029.66	267.21	18	-62
TH561	18579.96	20291.89	1028.91	297.21	18	-62
TH562	18680.06	20277.78	1031.007	54	18	-62
TH562A	18679.91	20271.29	1030.465	270.01	18	-62
TH563	18670.53	20307.37	1032.62	63	18	-61
TH563A	18670.43	20309.07	1032.68	249	16	-62
TH564	18627.98	20544.98	1046.52	307.5	196	-65
TH565	18750.6	20333.53	1036.13	170.01	18	-63
TH566	18679.59	20358.53	1036.37	150.21	18	-54
TH567	18600.09	20358.8	1032.7	144.11	18	-49
TH570	18683.11	20559.9	1039.271	258.81	198	-47.5
TH571	18683.11	20559.9	1039.271	361.7	198	-41
TH572	18950	20587	1024	281.31	230	-21
TH579	18658.63	20357.5	1034.851	231.6		
TH608	18682.58	20336.21	1034.624	180.6		
TH636	18771.9	20314.63	1034.68	158.7	0	-55.5
TH637	18778.02	20349.64	1037.895	131.6	5	-64.5
TH638	18723.02	20360.3	1037.949	159	355	-63
TH639	18714.13	20328.1	1034.993	197.1	4.5	-60
TH640	18700.12	20304.47	1032.909	150	0	-59
TH641	18689.94	20318.82	1033.674	120	0	-60
TH642	18620.08	20298.04	1030.371	287.8	0	-60
TH643	18630.18	20360.2	1034.255	62.8	0	-60
TH644	18654.94	20343.12	1034.079	188.7	5	-61
TH645	18630.04	20340.16	1033.045	188.7	0	-60
TH646	18620.61	20336.12	1032.44	188.7	359	-61
TH647	18630.08	20359.42	1034.27	185.8	0	-60
TH648	18700.07	20306.34	1033.072	239.8	0	-60
TH649	18640.13	20529.99	1046.649	309	180	-62
TH650	18640.08	20529.91	1046.662	73.3	180	-51
TH651	18640.1	20529.68	1046.763	260.8	180	-51
TH652	18642	20529.75	1046.637	64	172	-53
TH653	18654.83	20320.53	1032.739	278.5	4	-62
TH654	18713.83	20324.95	1034.74	224.8	22	-62
TH657	18795.21	20317.43	1035.117	194.5	22	-62
TR1	18800	20190	1028	448.01	360	-60
TR2	18400	20290	1024	469.21	360	-60
TRRC072	18400	20400	1028	210.01		

Hole_ID	X	Y	Z	Max_Depth	Azimuth	Dip
TRRC080	18400	20371	1028	78.01		
TRRC081	18450	20365	1028	60.01		
TRRC082	18549.63	20366.07	1029.82	200.01		
TRRC083	18474.09	20291.1	1025.11	358.01		
TRRC084	18650.7	20326.25	1033.03	261.01		
TRRC085	18650.64	20356.6	1034.72	208.01		
TRRC086	18650.43	20286.86	1031.04	294.01		
TRRC087	18750.69	20326.17	1035.42	210.01		
TRRC088	18895.11	20248.35	1030.28	100.01		
TRRC089	18597.3	20344.37	1031.67	246.01		
TRRC090	18700.96	20331.42	1034.68	256.01		
TRRC091	18650.97	20374.29	1036.11	132.01		
TRRC092	18499.73	20360.42	1027.94	240.01		
TRRC094	18750.79	20366.58	1039.51	142.01		

WEST 45 APPENDIX 2

WEST 45 – DRILLHOLE INTERCEPT TABLES

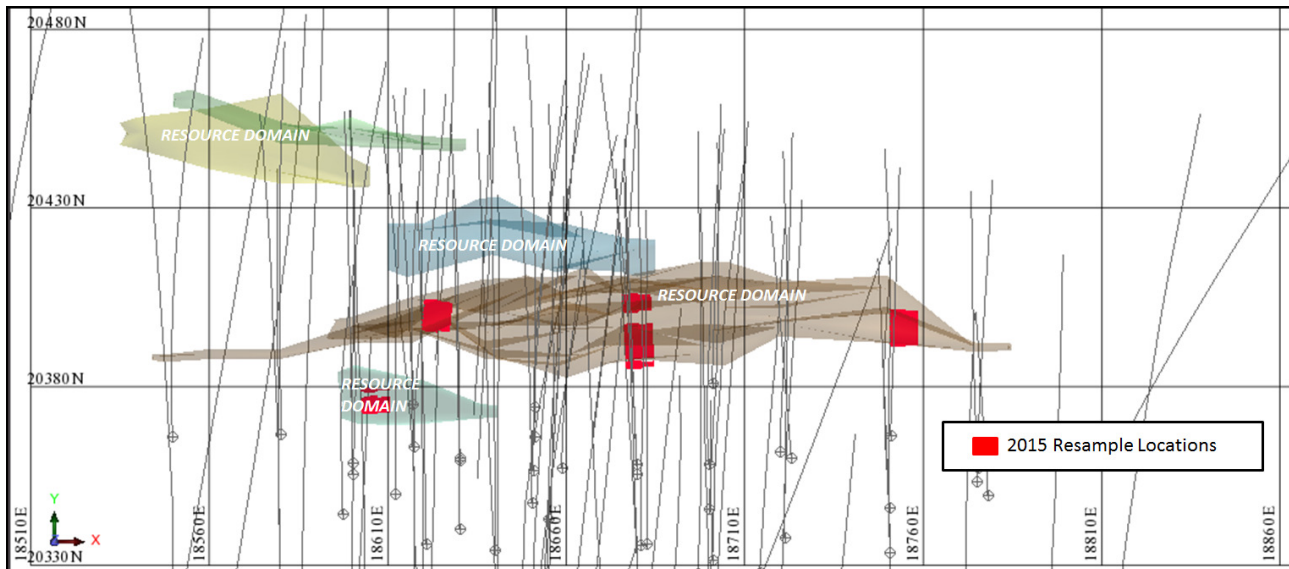
hole_id	depth_from	depth_to	Cu %	Pb %	Zn %	Ag ppm	Au ppm	domain
TH045	314	318	1.22	0.04	3.02	8.6		6
TH510	142.5	149	1.13	6.84	12.53	105.2	0.49	1
TH510	154	160.1	0.42	2.21	6.27	64.7	0.24	1
TH510	166.1	197.4	0.18	1.96	6.61	47.4	0.16	3
TH512	175.7	183.7	0.42	5.47	9.37	24.1	0.37	4
TH513	94	106.51	0.38	1.64	3.02	213.5	0.67	1
TH515	73.8	77	0.29	2.34	6.42	90.3	0.35	1
TH516	41.55	47.24	0.25	3.70	6.27	57.0	0.33	1
TH516	157.75	167.91	0.16	1.52	2.79	30.9	0.14	5
TH520	143.6	155.5	0.77	5.26	13.70	64.5	0.30	1
TH524	34.6	48	0.57	3.13	5.19	65.6	0.43	1
TH524	146.55	147.7	0.05	0.84	3.48	9.0	0.08	5
TH525	257.82	259.96	0.92	0.42	4.25	9.5	0.06	6
TH527	66.05	78.55	1.21	4.40	7.58	89.0	0.16	1
TH527	164.9	168.7	0.69	1.14	9.26	21.2	0.18	5
TH528	187.74	190	0.30	1.75	2.58	75.3	0.32	1
TH528	210	241	0.26	2.04	3.69	8.8	0.08	1
TH530	105.15	123.25	1.62	6.46	13.32	124.6	0.64	1
TH537	158.05	173.1	0.11	1.74	3.04	21.4	0.13	1
TH537	183.35	205.33	0.08	1.24	4.13	14.4	0.04	3
TH538	95.4	102.84	1.45	9.43	17.83	151.8	0.73	1
TH538	116.3	132.55	0.39	4.68	8.95	95.1	0.39	1
TH541	123.3	153.8	1.31	5.42	13.16	218.4	1.00	1
TH542	129.4	137.3	0.66	6.11	14.09	90.8	0.58	1
TH542	171.7	191.7	0.10	1.70	2.80	35.3	0.13	3
TH543	115.5	117	0.55	3.06	8.18	55.7	0.31	1
TH543	119.4	131.5	0.56	7.16	11.92	119.5	0.60	1
TH545	121.8	123.7	0.17	1.36	2.15	22.2	0.11	4
TH545	148.8	150.2	0.05	1.02	1.21	160.3	2.12	1
TH545	215.1	220.1	0.07	1.15	4.53	14.4	0.11	6
TH547	153.3	158.3	0.12	1.66	2.93	22.0	0.10	1
TH547	172.2	197.2	0.19	3.11	5.61	45.5	0.23	1
TH547	213.7	240.3	1.60	0.85	6.05	22.7	0.15	3
TH548A	144.8	151.3	1.60	8.87	19.10	78.1	0.59	4
TH549	103.7	111.6	0.32	4.05	5.97	72.2	0.20	1
TH550	157.7	163.7	0.29	2.19	4.01	28.2		1
TH550	180.7	196.6	0.89	2.04	12.28	27.0	0.15	1
TH550	209.31	216.8	0.62	1.69	7.86	19.1	0.11	3

hole_id	depth_from	depth_to	Cu %	Pb %	Zn %	Ag ppm	Au ppm	domain
TH552	74	75	0.53	2.16	10.23	360.0	1.18	1
TH553	88.1	104	0.57	6.81	18.55	175.7	0.79	1
TH553	110	116	0.38	2.17	3.14	8.5	0.09	1
TH554A	182.6	200	1.00	6.22	13.47	161.3	0.80	1
TH554A	206.6	216	0.64	1.21	7.69	20.6	0.14	1
TH554A	227	230	0.47	0.86	6.52	19.3	0.12	3
TH556	75.2	77.5	0.59	2.64	5.73	94.3	0.39	1
TH558	191.8	196.8	0.12	2.28	3.72	18.4	0.05	1
TH558	216.4	218.4	0.41	1.55	3.54	61.5	0.17	1
TH560	241	248	0.31	1.60	4.43	17.9	0.11	6
TH563A	168	173.7	0.70	3.17	9.66	130.6	0.39	1
TH563A	184.6	208.4	0.70	3.58	11.86	61.3	0.51	1
TH563A	230.8	234.4	0.22	2.52	4.48	26.9	0.24	3
TH564	201.2	202.1	0.26	0.59	5.57	8.0	0.04	5
TH564	241.8	246.9	0.34	2.43	6.16	19.4	0.15	3
TH565	124	127.4	1.20	4.03	11.31	35.7	0.20	1
TH567	53.2	55	0.97	4.80	12.41	121.3	0.42	1
TH567	136	137.7	0.15	3.24	4.49	19.0	0.07	5
TH570	208	213	0.46	3.63	6.92	187.8	0.54	1
TH570	228.2	235	0.47	3.06	5.88	64.8	0.21	1
TH571	198.7	216.58	0.94	5.58	11.48	167.4	0.62	1
TH579	140	142	0.91	7.34	11.79	168.0	0.35	1
TH579	163.9	197	0.28	2.22	3.81	17.8	0.12	1
TH608	120.5	137.2	0.90	6.38	9.62	139.0	0.56	1
TH638	88	89.15	1.80	21.80	28.60	554.0	0.84	1
TH638	104.8	112	0.18	3.37	4.73	20.3	0.10	1
TH639	137.5	141.5	0.50	3.17	10.45	42.0	0.31	1
TH639	148	163.8	0.62	3.46	10.01	43.1	0.15	1
TH642	155.4	157	0.22	2.36	3.60	44.9		4
TH642	225.1	239.1	0.72	2.74	7.22	32.1	0.12	3
TH644	107.9	129.8	0.72	10.63	16.84	203.2	0.73	1
TH645	116.3	126.2	0.67	6.39	10.01	77.9	0.45	1
TH646	118.3	123.2	0.38	1.59	1.35	37.0	0.14	1
TH647	80	92.45	0.46	2.36	3.57	47.7	0.24	1
TH647	171.1	173.7	0.85	0.69	10.40	18.6	0.09	5
TH648	162.1	166.3	0.40	0.81	3.05	20.7	0.10	1
TH649	209.2	224	0.09	0.93	1.53	9.4	0.06	3
TH651	198	203	0.28	1.78	3.39	70.0	0.27	1
TH651	208	211	0.18	2.04	2.85	86.1	0.33	1
TH651	233.25	238	0.78	6.02	8.52	50.4	0.87	4

hole_id	depth_from	depth_to	Cu %	Pb %	Zn %	Ag ppm	Au ppm	domain
TH653	150	153	0.15	1.76	3.49	35.8	0.12	1
TH653	168	171.1	0.11	0.89	1.61	94.6		1
TH653	189	206	0.07	0.29	1.78	23.5	0.03	3
TRRC082	44	47	0.82	2.59	9.94	20.7	0.18	1
TRRC082	172	177	0.10	0.94	4.22	10.6	0.11	5
TRRC084	141	146	0.86	2.91	16.24	10.0	0.54	1
TRRC084	152	156	1.23	4.02	19.24	344.8	1.26	1
TRRC084	171	195	0.13	1.84	5.18	48.0	0.21	3
TRRC085	94	102	0.82	4.81	7.26	65.8	0.31	1
TRRC086	185	196	0.31	4.58	8.70	42.2	0.19	1
TRRC086	209	236	0.31	1.26	4.11	24.0	0.12	1
TRRC089	108	110	0.60	0.10	11.10	77.0	0.22	1
TRRC090	142	154	0.36	3.50	11.39	37.4	0.44	1
TRRC090	165	189	0.49	3.24	9.51	22.3	0.10	1

WEST 45 APPENDIX 3

WEST 45 - DRILLHOLE COLLAR PLAN



JORC Code, 2012 Edition – Table 1 (ORIENT Deposit)

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling (eg 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 (eg ‘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 (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> The deposit was primarily sampled via NQ2 half core samples based on geological considerations within diamond drill holes drilled on a 40m x 40m pattern through the deposit area. All holes used for the resource estimate were drilled between 1995 and 1997. The holes were orientated to ensure drill intersections were approximately perpendicular to the dip and strike of the ore lenses and overall geological package. Diamond core samples were analyzed for Cu, Pb, Zn, Ag and Fe by atomic absorption spectrum (A103) that used a mixed acid digest. Gold was analyzed for via 50g fire assay with an atomic absorption spectrum finish (method PM209).
Drilling techniques	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> A total of 37 diamond holes have been drilled in the Orient project area, of these a total of 26 diamond holes have been used to estimate resources for the project. The diamond core size drilled was predominately with standard tube NQ2 sized core and sometimes down to BQ sized core where difficult ground conditions were encountered. Holes were pre-collared through the 50-120m thick cover sequence. All diamond core was orientated.
Drill sample recovery	<ul style="list-style-type: none"> 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 and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	<ul style="list-style-type: none"> The diamond core drill recovery was monitored using a combination of the drillers run sheets, core block markings and manual piecing together of core and measurement by RGC Thalanga Pty Ltd Geologists and Field Assistants in the core processing facility. Any core loss was noted within the logging sheets. The resource is based on diamond drilling, the deposit predominately consists of zinc, lead and copper mineralization, there are no concerns regarding loss of fine material during the core sampling process for this deposit.

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> All diamond core was logged for geological and geotechnical characteristics. Rock type, alteration style and sulphide mineral content were logged by a site geologist. The logging was sufficient to enable creation of detailed geological model that supports the resource estimate. Core photographs are taken of each core tray and stored as part of the resource database dataset.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> NQ2 sized diamond core was marked up and cut in half with a diamond core saw. BQ sized core was whole sampled. The right side of the core as sampled according to the geological intervals selected by the site Geologist. The methodology of selecting half core via geological intervals guarantees that the core samples are representative. The sample sizes vary from material sourced from the core samples given the varying sample lengths. The sample sizes are appropriate given the relatively even distribution of base metal grades within the deposit
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> 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. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> The ALS laboratory – Charters Towers completed internal standard and duplicate samples. Systematic insertion of standards, blanks and duplicates was not undertaken during the drilling stage. 108 quarter core samples were taken in January 2015 that were compared to the original assay dataset. The correlation coefficient for all metals was 0.88 from this recent resampling program. The results of the resampling program provide verification of the original Orient assay dataset.
Verification of sampling and assaying	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Holes are drilled to within 15m of each other in some areas of the deposit as either twins or scissor holes, the assay data in these holes is consistent through the mineralized zone between the holes. Data was entered into a central database and then validated by a series of validation checks to ensure erroneous data was not saved into the resource database.

Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • The Thalanga mine grid was extended to cover the Orient deposit. All holes were surveyed using the site survey team who used an EDM theodolite. • The topography surface is represented by a wireframe file that has been edited over time by the site survey team. The surface covers the complete Orient deposit area. The surface is an accurate representation of the actual topographic surface at the site.
Data spacing and distribution	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • The Orient deposit has been drilled on an average spacing of 40m x 40m in the main resource area and down to 20m x 20m in some places. This drill spacing provides evidence of mineralized zone continuity for the purposes of resource estimation. • No sampling compositing was necessary in the initial diamond drilling however compositing of raw assay data was completed in preparation for the resource estimation process.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> • 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 have introduced a sampling bias, this should be assessed and reported if material. 	<ul style="list-style-type: none"> • The majority of diamond holes were orientated to provide an approximate perpendicular intersection angle with the main mineralized zones. • No sampling bias is assessed as been caused by the orientation of the drilling orientation. Scissor holes provide confirmation of domain orientations and thickness.
Sample security	<ul style="list-style-type: none"> • The measures taken to ensure sample security. 	<ul style="list-style-type: none"> • Samples were supervised by either the drill crew, field assistant or geologist and at all times. Given the base metal nature of the deposit sample security was no assessed as a significant risk.
Audits or reviews	<ul style="list-style-type: none"> • The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> • A due diligence review of the resource estimation was completed by Mining One Consultants was completed in November 2013.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> A 4% NSR is payable to Thalanga Copper Mines. The license area is current.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> RGC Thalanga Pty Ltd drilled the deposit between 1995-1997.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> Orient consists of a VHMS style deposit that consists of a massive sulphide zone and a stringer zone. The mineralized horizon is developed developed within quartz eye volcanoclastics located between a dacite hangingwall and rhyolite footwall.
Drill hole Information	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> A list of each resource drillhole location and interval is located as an appendix to this table, see below.
Data aggregation methods	<ul style="list-style-type: none"> 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. 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. 	<ul style="list-style-type: none"> The exploration results reported for Orient were included as weighted average assay intervals for Zn, Cu, Ag and Pb. No cutting of high grades was completed when reporting as exploration results

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> 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. 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'). 	<ul style="list-style-type: none"> The typical drill sample interval is 1m in length, the average thickness of the mineralized zone is 5m, there are no issues with reporting the results based on this. The drillholes intercepted the mineralized lenses at an approximately perpendicular angle. All exploration results were reported as downhole thicknesses.
Diagrams	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> See Appendix 3 for a location plan of all drill collars used in the resource estimate.
Balanced reporting	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> All drill intercepts are listed in Appendix 2
Other substantive exploration data	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Not Applicable
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (eg 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. 	<ul style="list-style-type: none"> A detailed economic assessment is to be completed to establish likelihood of establishing project reserves. No additional drilling planned at this stage.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> 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. Data validation procedures used. 	<ul style="list-style-type: none"> The survey, sampling and logging data was electronically imported into the resource database. Checks were also made of the original lab sample sheets and the database to ensure that transcription errors were not present. A visual check was also made of the drill traces, assay and logging data in the 3D environment of Surpac to ensure that results correlated between drillholes and were inline with the geological interpretation and mineralization continuity.
Site visits	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> A site visit was completed by Stuart Hutchin on 16/10/2013 where Orient core samples were inspected.
Geological interpretation	<ul style="list-style-type: none"> Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	<ul style="list-style-type: none"> The confidence in the overall geological interpretation is high given the continuity of the mineralized zone defined at the 40m x 40m drill spacing. The dacite, quartz eye volcanoclastics and rhyolite geological units have been modelled and are used to define general areas of rock types within the deposit. The mineralized zones typically occur within the quartz eye volcanoclastics. The mineralized lenses occur within the quartz eye volcanoclastic package, they are discrete pods of massive sulphide and stringer mineralization.
Dimensions	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The strike length of the overall mineralized zone is 340m, thickness of the zones ranges from 5m to 10m. The resource domains are located from 150m below the surface topography and extend to a depth of 500m below surface.
Estimation and modelling techniques	<ul style="list-style-type: none"> 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 availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. 	<ul style="list-style-type: none"> The resource model was constructed using Surpac software. Mineralised domain wireframes were constructed by modelling the geological cut-off seen in the logging for both the massive sulphide zone and the stringer zone. A minimum domain thickness of 2m was used, this corresponds to the minimum practical mining width within an underground operation. High grade Zn, Cu, Pb, Ag and Au were applied using the 95th percentile method. For the massive sulphide zone a total of 8 assay values were cut for all metals except zinc where 7 were cut. For the stringer zone a total of eight samples were cut for all metals. A composite file was created using an average

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> • <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i> • <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i> • <i>Any assumptions behind modelling of selective mining units.</i> • <i>Any assumptions about correlation between variables.</i> • <i>Description of how the geological interpretation was used to control the resource estimates.</i> • <i>Discussion of basis for using or not using grade cutting or capping.</i> • <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i> 	<p>composite length of 1m. The average sample length within the assay dataset is also 1m.</p> <ul style="list-style-type: none"> • Variograms were not created due insufficient quantity of sample pairs within the relatively small dataset, meaningful variograms were not created. • An inverse distance estimate was run given the lack of variograms. This method is however deemed to be suitable given the style and orientation of the mineralization. • A 10m x 10m x 5m (RL) parent block size was used with sub blocking to 1.25m x 1.25m x 0.625m (RL) used. This is deemed appropriate in relation to the style of mineralization, ore zone geometry and potential future mining methods.
Moisture	<ul style="list-style-type: none"> • <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i> 	<ul style="list-style-type: none"> • The resource tonnages have been estimated on a dry basis
Cut-off parameters	<ul style="list-style-type: none"> • <i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i> 	<ul style="list-style-type: none"> • A cutoff using 5% Zn Eq has been used to report resources. This was chosen as the lower limit of potentially economically extractable material within an underground mining operation in this style of deposit. The zinc equivalent formula used is: $\text{ZnEq\%} = \text{Zn\%} + (0.77 \times \text{Pb\%}) + (4.46 \times \text{Cu\%}) + (1.46 \times \text{Au g/t}) + (0.06 \times \text{Ag g/t})$
Mining factors or assumptions	<ul style="list-style-type: none"> • <i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part 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.</i> 	<ul style="list-style-type: none"> • The resources have been estimated using a minimum thickness of 2m for each of the domain shapes, this minimum thickness therefore accounts for any dilution in zones that are less than this thickness. The proposed mining method is via underground long hole stoping techniques, the model parameters are therefore deemed to be suitable for this type of potential mining operation.
Metallurgical factors or assumptions	<ul style="list-style-type: none"> • <i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions</i> 	<ul style="list-style-type: none"> • The ore is planned to be crushed and a concentrate containing Zn, Pb, Ag and Cu produced, metallurgical test work has shown that a saleable concentrate can be produced from the Orient ore. The ore will be processed at the

Criteria	JORC Code explanation	Commentary
	<i>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.</i>	existing Thalanga processing facility.
Environmental factors or assumptions	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The tailings produced during the creation of the concentrate will be disposed of at the currently permitted Thalanga tailings facility. Waste rock from the mine will be placed on the existing waste dump locations. Approvals have been given for mining of the West 45 deposit by the Queensland State Government.
Bulk density	<ul style="list-style-type: none"> Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. 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. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	<ul style="list-style-type: none"> The bulk densities for the ore and waste rock types were estimated using the Archimedes method, that is (Dry Weight / (Dry Weight – Wet Weight)). Bulk density measurements were obtained for all sample intervals within the diamond drill holes.
Classification	<ul style="list-style-type: none"> The basis for the classification of the Mineral Resources into varying confidence categories. 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 values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit. 	<ul style="list-style-type: none"> The resources have been classified according to the drill density and the modelled continuity of both the thickness and grade of the mineralized zones in the view of the resource geologist. Only indicated and inferred blocks have reported for the resource, no measured blocks are reported. The resource classification is deemed appropriate in relation to the drill spacing and geological continuity of the mineralized domains.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of Mineral Resource estimates. 	<ul style="list-style-type: none"> Mining One consultants completed a review of the Orient resource as part of a due diligence program. No critical flaws were highlighted with the source data set or the modelling methodology.
Discussion of relative	<ul style="list-style-type: none"> Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or 	<ul style="list-style-type: none"> The resource estimate is deemed to be an accurate reflection of both the geological interpretation and tenure of mineralization

Criteria	JORC Code explanation	Commentary
<i>accuracy/ confidence</i>	<p><i>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.</i></p> <ul style="list-style-type: none"> <i>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.</i> <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i> 	<p>within the deposit.</p>

ORIENT APPENDIX 1

ORIENT – DRILLHOLE COLLAR LOCATIONS

Hole_ID	X	Y	Z	Max_Depth	AMG_East	AMG_North	Azimuth
TH046	33139.35	30574.99	985.93	331.8	373578.087	7750656.993	214
TH047	32902.89	30533.61	986.6	254	373368.33	7750540.24	205
TH047A	32902.89	30533.61	986.6	259	373368.33	7750540.24	205
TH049	32791.57	30528.92	986.6	247	373264.73	7750499.255	205
TH050	33021.57	30551.98	986.8	317	373474.398	7750596.576	205
TH053	32913.98	30558.12	986.7	422	373370.759	7750567.039	209
TH057	32629.09	30168.4	985.3	505	373229.671	7750105.37	357
TH150	32536.31	30533.31	987.37	250.8	373022.188	7750419.566	180
TH153	33073.09	30385.62	986.06	330	373577.698	7750456.365	360
TH154	32958.89	30567.85	986.02	132	373409.98	7750590.97	180
TH154A	32958.89	30567.85	986.02	268	373409.98	7750590.97	180
TH399	32562.72	30399.75	986.33	131	373090.999	7750302.088	360
TH418	32799.49	30549.71	986.12	232	373265.383	7750521.493	180
TH419	32442.58	30568.5	987.58	209.4	372922.1	7750422.019	180
TH420	32637.5	30536.85	986.48	223	373116.602	7750456.143	180
TH421	32955.25	30699.17	986.39	508	373363.414	7750713.819	180
TH422	33154.5	30722.89	986.1	508	373543.821	7750801.664	178
TH424	32899.15	30589.64	986.08	319	373346.4	7750591.94	179
TH425	32899.16	30589.34	986.07	249	373346.508	7750591.66	179
TH426	32960.49	30556.04	986.1	136.5	373415.372	7750580.35	179
TH427	32998.97	30600.94	986.16	380	373436.971	7750635.397	176
TH428	32797.71	30516.13	985.887	148	373274.102	7750488.835	177
TH431	33122.94	30654.64	986.13	430	373536.427	7750726.834	180
TH432	33201.87	30643.45	985.94	370.4	373614.654	7750742.189	180
TH433	33323.3	30656.01	985.7	433.4	373725.223	7750793.934	180
TH434	33282.72	30645.14	985.75	559.3	373690.464	7750770.339	180
TH435	33285.08	30800.5	985.7	661.7	373641.66	7750917.85	180
TH435A	33285.08	30800.5	985.7	388.5	373641.66	7750917.85	180
TH436	33283.03	30417.22	985.35	302.8	373765.613	7750555.164	360
TH437	33359.5	30711.73	985.5	147	373741.114	7750858.452	176
TH438	33359.52	30711.38	985.52	583.5	373741.248	7750858.128	180
TH439	33196.72	30467.88	985.6	210.6	373667.453	7750574.667	360

Hole_ID	X	Y	Z	Max_Depth	AMG_East	AMG_North	Azimuth
TH440	33118.09	30609.13	986.07	307.5	373546.793	7750682.256	180
TH441	33194.16	30686.4	985.91	421.5	373593.265	7750780.224	180
TH442	33362.08	30695.15	985.76	283.4	373748.996	7750843.639	180
TH443	33340.23	30728.31	985.88	428.8	373717.468	7750867.783	180
TH444	33251.37	30623.97	985.79	171.4	373667.806	7750740.047	180
TH445	33220.46	30673.93	985.91	271.4	373622.202	7750777.083	180
TH446	33182.84	30624.44	986.06	192.4	373602.92	7750717.98	180
TH447	33233.63	30655.58	985.86	245.05	373640.668	7750764.077	180
TH448	33251.02	30640.08	985.93	220.4	373662.184	7750755.148	180
TH449	33300.09	30751.83	985.58	463.3	373671.83	7750876.815	180
TH450	33380.83	30751.27	985.63	251.3	373748.275	7750902.804	180
TH459	33300.21	30294.09	984.68	430.3	373822.28	7750444.507	180
TH460	33456.14	30770.53	985.143	132	373813.123	7750945.183	180
TH461	33457.08	30758.82	985.18	686.45	373817.81	7750934.97	180
TH462	33319.58	30705.03	985.63	381.3	373705.609	7750839.013	180
TH463	33349.52	30312.82	984.82	394.4	373862.704	7750478.393	357
TH464	33224.68	30644.16	985.837	229.5	373633.487	7750749.319	180
TH465	33332.16	30272.22	984.65	515	373859.641	7750434.344	2
TH466	33330.39	30696.47	985.77	334.4	373718.631	7750834.478	180
TH467	33367.2	30283.5	984.7	271.4	373889.032	7750456.506	360
TH468	33281.82	30626.05	985.76	198	373695.884	7750752.012	180
TH469	33239.59	30405.1	985.44	292.3	373728.564	7750529.449	4
TH470	32991.33	30670.22	986.46	490.4	373407	7750698.32	176
TH471	33600.12	30658.19	985.09	234.2	373985.97	7750886.91	180
TH473	33334.99	30299.99	984.85	535.7	373853.193	7750461.503	360
TH474	32985	30100	985	900.6	373588.3	7750157.66	360
TH475	33519.2	30717.45	985.08	540.6	373890.076	7750916.306	180
TH476	33019.15	30736.98	986.52	330.3	373411.351	7750770.519	180
TH478	33262.77	30648.89	985.83	259.5	373670.38	7750767.32	180
TH479	33277.67	30643.37	985.78	244.5	373686.275	7750767.008	180
TH483	32790	30125	985	614.2	373395.91	7750117.23	360
TH484	33295.5	30675.32	985.76	325.5	373692.623	7750803.042	180
TH485	33237.58	30687.92	985.93	327.2	373633.777	7750795.92	180
TH486	33259.13	30403.43	985.32	344	373747.568	7750534.289	360
TH487	32868.37	30529.78	985.82	198.4	373336.987	7750525.291	180
TH489	33239.83	30456.87	985.41	201.5	373711.787	7750578.426	360
TH490	33368.28	30341.01	984.92	494	373871.164	7750511.181	360
TH491	33342.33	30377.31	984.94	422	373834.732	7750536.944	360

ORIENT APPENDIX 2

ORIENT– DRILLHOLE INTERCEPT TABLES

HOLE_ID	CODE	FROM	TO	LENGTH	SG	Cu	Pb	Zn	Ag	Au
TH432	OZ	202	204.7	2.7	3.69	4.30	3.37	10.28	162	1.12
TH434	OZ	306.5	315.5	9	3.93	0.47	1.75	15.97	20	0.05
TH436	OZ	243.4	246.9	3.5	4.25	2.12	3.11	16.75	32	0.24
TH439	OZ	182	193	11	4.04	1.12	1.77	13.17	41	0.16
TH443	OZ	416	422	6	4.04	0.24	4.50	18.40	88	0.16
TH445	OZ	255.6	258.68	3.08	3.79	1.89	0.48	6.34	26	0.23
TH446	OZ	160.55	164.3	3.75	3.50	1.85	3.92	10.67	98	0.24
TH447	OZ	224.85	233.97	9.12	3.98	0.36	4.06	19.31	73	0.13
TH448	OZ	189.6	205.35	15.75	3.94	0.49	1.79	9.12	30	0.11
TH449	OZ	453.4	454.3	0.9	2.89	0.18	0.04	2.35	6	0.05
TH459	OZ	411.93	417.07	5.14	3.65	1.30	3.74	18.85	68	0.28
TH462	OZ	361.7	367.52	5.82	3.99	1.65	0.96	5.32	24	0.24
TH464	OZ	212.7	221.7	9	4.10	1.10	3.16	15.29	54	0.11
TH465	OZ	483.13	486.8	3.67	3.65	0.79	0.72	12.10	29	0.01
TH469	OZ	262.4	267	4.6	3.65	0.71	4.69	13.58	100	0.22
TH473	OZ	519	521.77	2.77	3.93	0.38	5.45	29.39	58	0.18
TH478	OZ	221.2	245.55	24.35	4.23	0.95	4.83	14.96	67	0.05
TH479	OZ	201.37	205.37	5	3.83	0.65	2.18	7.04	57	0.17
TH484	OZ	294.52	307.68	13.16	4.35	2.01	2.15	5.91	49	0.24
TH485	OZ	305.3	309.3	4	3.71	2.19	2.99	9.60	154	0.30
TH486	OZ	324	334.9	10.9	4.11	0.87	4.62	17.47	89	0.27
TH489	OZ	174	177.5	3.5	3.84	0.48	3.06	8.19	74	0.48
TH491W	OZ	388	392.28	4.28	3.89	0.55	4.01	12.84	102	0.25
TH502	OZ	515.31	517.43	2.12	3.57	2.33	2.67	15.13	83	1.02
TH502W	OZ	501.01	502.46	1.45	3.44	1.84	1.37	13.28	66	0.71
TH517	OZ	184.5	187.22	2.72	4.02	1.44	2.13	7.76	56	0.14

HOLE_ID	CODE	FROM	TO	LENGTH	SG	Cu	Pb	Zn	Ag	Au
TH432	SZ	193	202	9	3.54	0.65	0.75	2.34	29	0.20
TH434	SZ	291.5	306.5	15	3.60	0.54	0.47	0.20	34	0.30
TH436	SZ	246.9	248.65	1.75	3.18	0.89	1.15	4.83	129	0.31
TH439	SZ	193	197	4	3.16	0.91	0.14	0.11	21	0.15
TH443	SZ	412	416	4	3.25	0.99	1.31	3.88	48	0.11
TH445	SZ	238.2	255.17	16.97	3.27	0.65	0.14	0.73	20	0.13
TH446	SZ	149.25	160.55	11.3	3.39	0.72	0.28	1.47	22	0.22
TH447	SZ	221.95	224.85	2.9	3.02	0.24	0.13	0.86	8	0.07
TH448	SZ	181	189.6	8.6	3.15	0.58	1.14	5.12	42	0.15
TH449	SZ	437.7	453.4	15.7	2.93	0.52	0.30	2.07	31	0.37
TH459	SZ	417.07	424.1	7.03	2.90	0.30	0.15	0.69	6	0.01
TH462	SZ	360.75	361.7	0.95	2.71	0.03	0.03	0.02	1	0.01
TH464	SZ	206.7	212.7	6	3.40	0.71	0.42	2.67	21	0.07
TH465	SZ	486.8	490.8	4	2.85	0.15	0.59	1.13	37	0.12
TH469	SZ	267	275	8	3.25	0.94	0.43	2.59	26	0.33
TH473	SZ	521.77	523.8	2.03	3.02	0.81	1.64	7.32	64	0.44
TH478	SZ	219.2	221.2	2	2.88	0.49	0.30	0.33	21	0.10
TH479	SZ	200.37	201.37	1	3.11	0.55	0.03	2.36	3	0.02
TH484	SZ	284.9	294.52	9.62	3.53	5.20	0.55	0.63	76	0.58
TH485	SZ	286.38	305.3	18.92	3.36	0.46	0.26	1.13	36	0.20
TH486	SZ	334.9	335.9	1	2.88	0.18	0.73	3.66	44	0.68
TH489	SZ	177.5	178.5	1	2.70	0.09	0.06	0.16	3	0.02
TH491W	SZ	392.28	394.52	2.24	2.81	0.25	0.05	0.16	7	0.07
TH502	SZ	513.36	515.31	1.95	3.03	1.10	0.18	5.48	18	0.14
TH502W	SZ	498.98	501.01	2.03	3.08	1.32	0.27	2.44	28	1.64
TH517	SZ	178.91	184.5	5.59	3.52	2.07	0.04	1.41	15	0.16

ORIENT APPENDIX 3

ORIENT - DRILLHOLE COLLAR PLAN

