

## ASX/MEDIA RELEASE

ASX: ROL 14 November 2013



# HIGH GRADE MANGANESE INTERSECTION SIGNIFIES LIKELY RESOURCE EXTENSIONS

- **LWD 372 at Batu Hitam South**
  - 6.2m at 45% Mn from 10.8m including 2.5m at 54% Mn from 13.3m
- **Assay results additional to current manganese JORC resource**
- **Hole terminates in +7% base metals**
- **Scoping study on manganese project to be released next month**
- **Solid progress being made on mining licence application**

**Robust Resources Limited ('Robust' or 'the Company')** last week reported a mineral resource estimate of near-surface, high-grade manganese mineralisation from Manganese Valley and Batu Hitam West on Romang Island. The estimate was conducted to standards set out in the JORC (2012) code by independent consultants Mining Associates Pty Ltd (Table 1).

Deposit	Material (t)	Mn Grade (%)	Mn Metal (t)
BHW	37,000	46.5	17, 000
Mn Valley	529, 000	41.8	221, 000
Total Inferred	566, 000	42.5	238, 000

Table 1: High-grade Manganese mineral resource estimate. The complete independent JORC report is available on the Company's website: <http://www.robustresources.com.au/i/pdf/nr/Manganese%20Resource%20Estimate.pdf>

Subsequent to the completion of the resource estimate, assay results have been received from diamond drill hole LWD 372 located at Batu Hitam South, approximately 130 metres to the south of the current Manganese Valley mineral resource (Figure 1)

LWD 372 intersected near-surface, high-grade manganese mineralisation (Table 2) which indicates that extensions to the current manganese resources are highly likely.

Hole Number	Easting WGS84 Zone 52	Northing WGS84 Zone 52	RL m	Azimuth grid	Inclination	From (m)	To (m)	Interval (m)	Mn (%)
LWD372	319,294.0	9,156,879.8	286.7	180	-60 incl.	10.8	17.0	6.2	45.13
						13.3	15.8	2.5	54.19

Table 2: Drillhole collar details and summary of high-grade manganese intersections

LWD 372 also encountered polymetallic mineralisation deeper in the hole (Table 3). Significantly, the hole was still in strong base metal mineralisation grading 7.59% combined base metals when

the hole was terminated early for technical reasons. Table 3 below details the polymetallic intersections in LWD 372.

Hole Number	From (m)	To (m)	Interval (m)	Au Equiv (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Cu+Pb+Zn (%)
LWD372	99.8	109.0	9.3	0.51	0.15	19	0.10	0.85	1.66	2.61
	141.15	144.15 (eoh)	3.0	0.96	0.24	38	0.44	4.13	3.03	7.59

Table 3: Summary of precious and base metal intersections<sup>1</sup>

Robust's Managing Director Gary Lewis commented: "Following the release of our maiden manganese mineral resource estimate, we are pleased to report more near-surface, high-grade Mn assay results. These results show that an increase to the manganese JORC resource is very likely. Drilling is ongoing south of Manganese Valley as this target area is highly prospective for manganese, in addition to precious and base metals.

"The conceptual development path for Romang is now taking shape. A scoping study on the manganese will be completed in December, 2013. An updated JORC (2012) compliant mineral resource is due to be completed by February 2014 and on the regulatory side, solid progress is being made towards a transition from exploration licence to mining licence.

"The manganese project is seen as a low CAPEX, low-risk project that could be developed in a short timeframe and have an immediate and positive return on investment. Infrastructure established for the manganese project could be utilised during construction and operation of the subsequent polymetallic project.

"It would also allow the Romang Island community to become familiar with mining operations and will provide opportunities for participation, training and up-skilling of local workers. This will be a huge boost for the Romang Island, regency and provincial economies."

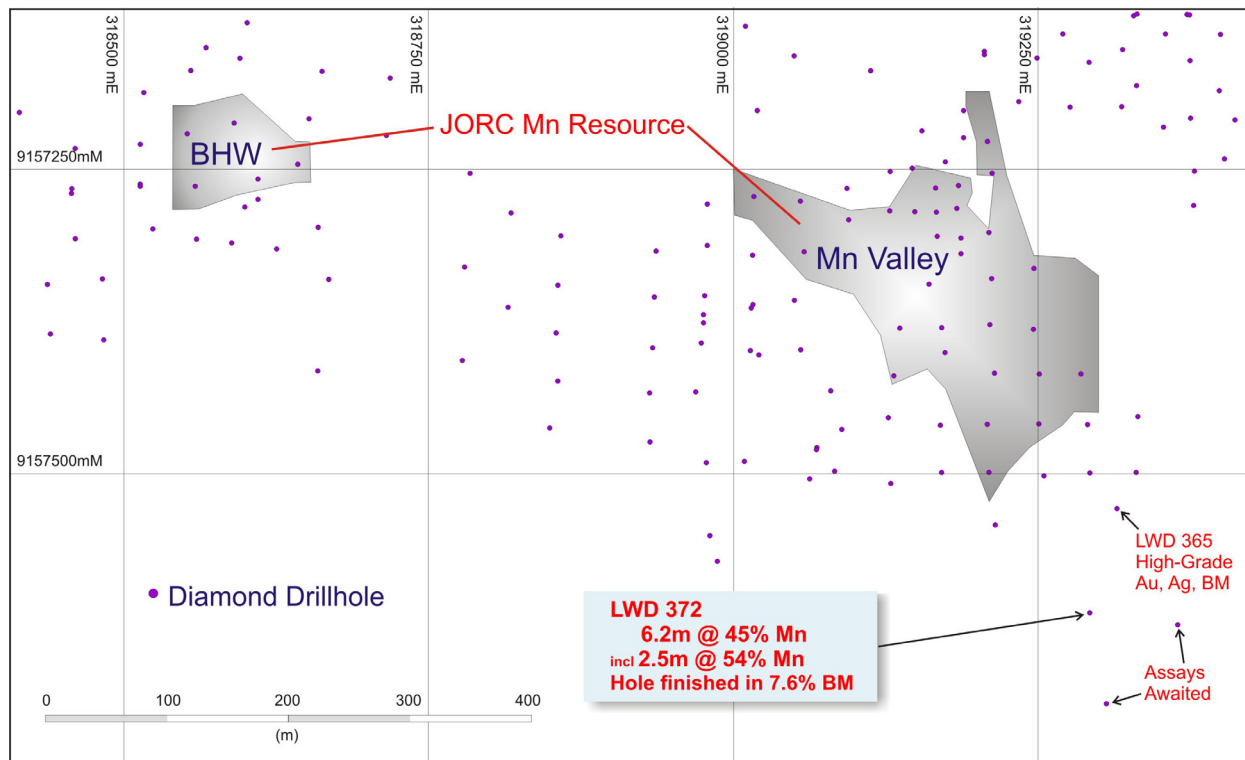


Figure 1: LWD 372 is located 130 metres south of the Mn Valley mineral resource. The hole intersected high-grade Mn mineralisation and finished in strong combined base metals (BM). Nearby LWD 365 intersected high grade precious metals (8.24 g/t AuEq over 7.4m and deeper 23m zone of 7.5% BM)

## About Robust

Robust Resources is a multi-commodity resource company engaged in the exploration and development of precious and base metals in Indonesia, the Kyrgyz Republic and the Philippines. It holds a 70.5% managing interest in the Romang Island polymetallic and manganese projects in Indonesia. In January 2012, the Company published a mineral resource estimate for work completed on Romang Island to the standards set out in the JORC code 2004. The Romang Island Indicated Mineral Resource totals 750 thousand ounces gold equivalent and 737 million pounds of base metals and the Inferred Mineral Resources totals 364 thousand ounces gold equivalent and 733 million pounds of base metals (details: [http://www.robustresources.com.au/s/resources\\_reserves.asp](http://www.robustresources.com.au/s/resources_reserves.asp)).

Since the completion of the above JORC (2004) mineral resource estimate in January 2012, , Resource Robust has completed additional drilling totaling over 17,000 metres and over 200 holes with consistent positive results. The Company is currently working on an updated mineral resource estimate which will be completed under the JORC (2012) guidelines. It is anticipated that this resource estimate will be completed by January, 2014.

Robust holds 80% of the Andash project in the Kyrgyz Republic. Published JORC (2004) Ore Reserves are 540 thousand ounces of gold and 140 million pounds of copper (details: [http://www.robustresources.com.au/s/resources\\_reserves.asp](http://www.robustresources.com.au/s/resources_reserves.asp)).

Robust recently signed an agreement to earn-in a 70% interest in Bashkol copper-gold project in the Kyrgyz Republic.

Robust's dual focus is to become a significant low cost precious and base metal producer on Romang Island and Andash as well as continuing its positive record of new discoveries from its portfolio of exploration properties. Robust trades on the Australian Securities Exchange (ASX) under the symbol ROL.

Robust Resources is now on Twitter. Please click on the link provided to follow: <https://twitter.com/RobustResources>

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**For further information please contact: Gary Lewis – Managing Director on +61 2 8259 4799**

### Competent Persons Statements

*The summary review of geology and mineral resource data, and the mineral resource estimate described in this report was conducted by Mr Ian Taylor. Mr Taylor visited the site from 7 to 11th September 2013. Mr Taylor has experience relevant to epithermal gold silver style of mineralisation and associated exhalative deposits under consideration and to the activity which they are undertaking. Mr Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Taylor holds a Bachelor of Science with Honours in Geology, is a Member of The Australian Institute of Geoscientists and a Certified Professional by the Australasian Institute of Mining and Metallurgy in the discipline of geology. Mr Taylor is employed by Mining Associates Limited of Brisbane, Australia*

*Mr Andrew Vigar supervised the resource estimate and reporting of this Manganese Resource, Mr Vigar has sufficient experience relevant to Volcanogenic Massive Sulphide (VMS) style of deposits under consideration and to the activity which they are 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'. Mr Vigar consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Vigar holds a Bachelor of Applied Science, is a Fellow the Australasian Institute of Mining and Metallurgy. Mr Vigar is employed by Mining Associates Limited of Brisbane, Australia*

*The information in this announcement that relates to Exploration Targets and Exploration Results is based on data compiled by John Levings BSc, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Levings is a director of the Company. Mr Levings has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which is being undertaking to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Levings consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.*

*1. AuEq = Gold Equivalent = gold assay + (silver assay / 53) where the number 53 represents the ratio where 53 g/t Ag = 1g/t Au. This ratio was calculated and rounded to the nearest whole integer from the average of the 24 months of Financial Year 2011 from July 2011 to June 2013 taken from published World Bank Commodity Price Data [http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink\\_data\\_m.xlsx](http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink_data_m.xlsx). The metal prices thus used in the calculation are the average Gold price of USD \$1638.39 per ounce and average Silver price of USD \$31.05 per ounce. Metallurgical flotation test-work has been carried out on polymetallic sulphide mineralisation similar to the material reported herein. High recoveries of all metals, including gold and silver, have been achieved in these tests and recovery levels of all metals are similar.(refer to Robust ASX announcement of November 30, 2010 titled "Sulphide Metallurgical Tests Return Exceptional Recoveries of Base and Precious Metals from Romang Island". ) For that reason it not considered necessary to apply metallurgical recovery factors in the formula for calculating gold equivalent. In the opinion of the Company that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold.*

## Appendix: JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>HQ and NQ sized diamond drill core. Triple-tube wireline standard equipment. 1 metre, half core samples collected in visually mineralized intervals. 2-metre quarter core samples in visually non-mineralised or weakly mineralised core. Whole sample core pulverized to 80% passing 200 mesh. 50g charge fire assay for gold. Wet geochemical or XRF techniques for silver and other metals. Regular assay suite: Au, Ag, As, Sb, Cu, Pb, Zn, Ba and Mn.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>HQ and NQ sized diamond drill core. Triple-tube wire line standard equipment. Core is oriented where ever possible using the spear technique.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Recovery is measured in the core tube by the driller and a marker inserted into the core tray noting any core loss. Core recovery is double checked by the geologist when logging the hole. No relationship between core recovery and grade has been discovered.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All core is geologically logged and photographed prior to sampling. Structural measurements are obtained where core orientation has been successful. Geotechnical logging is not carried out. Logging is semi-quantitative and 100% of reported intersections have been logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Continuous half core is sampled over 1-metre intervals as a general rule in visually mineralized intervals. Where the core is visually unmineralised or weakly mineralized then continuous quarter core sampling is carried out over 2 or 3 metre intervals to economize on assay and freight costs. Splitting the core is done with a diamond saw. Where there is a major geological boundary, sampling intervals are made to honour the boundary which may result in sampling intervals slightly less or slightly more than 1 metre.</li> <li>Quality control procedures include the insertion of standards (1 in 25 samples) and blanks (1 in 20 samples) into the regular sample number sequence. If any blank or standard is out of spec, re-assay is requested of the laboratory.</li> <li>Sampling size is considered to be appropriate. Assay repeatability for gold and other metals has never been an issue at Lakuwahi.</li> </ul>
Quality of assay data and laboratory	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF</li> </ul>	<ul style="list-style-type: none"> <li>All samples are completely pulverized and assayed at Intertek Testing Services laboratory <a href="http://www.intertek.com/minerals/global-services/">http://www.intertek.com/minerals/global-services/</a> : The following elements and ITS techniques are</li> </ul>

Criteria	JORC Code explanation	Commentary																																																							
tests	<p><i>instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <ul style="list-style-type: none"><li><i>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.</i></li></ul>	<p>used:</p> <table><tr><th>Elements</th><th>Units:</th><th>Lower</th><th>Upper</th><th>Scheme</th></tr><tr><td>Au</td><td>ppm</td><td>0.01</td><td>50</td><td>FA51</td></tr><tr><td>Ag</td><td>ppm</td><td>1</td><td>100</td><td>GA02</td></tr><tr><td>Cu</td><td>ppm</td><td>50</td><td>-</td><td>GA50S</td></tr><tr><td>Pb</td><td>ppm</td><td>50</td><td>-</td><td>GA50S</td></tr><tr><td>Zn</td><td>ppm</td><td>50</td><td>-</td><td>GA50S</td></tr><tr><td>Mn</td><td>ppm</td><td>50</td><td>-</td><td>GA50S</td></tr><tr><td>As</td><td>ppm</td><td>10</td><td>-</td><td>XR02</td></tr><tr><td>Sb</td><td>ppm</td><td>10</td><td>-</td><td>XR02</td></tr><tr><td>Ba</td><td>%</td><td>0.01</td><td>100</td><td>XR02</td></tr><tr><td>Ag</td><td>ppm</td><td>5</td><td>10000</td><td>GA30</td></tr></table> <ul style="list-style-type: none"><li>Quality control procedures include the insertion of standards (1 in 25 samples) and blanks (1 in 20 samples) into the regular sample number sequence. If any blank or standard is out of spec, re-assay is requested.</li><li>1:50 sample pulps are sent to a second independent laboratory in Perth Australia (Ultratrace) on a regular quarterly frequency.</li><li>No material issues of assay bias or repeatability have occurred since drilling commenced in 2008.</li></ul>	Elements	Units:	Lower	Upper	Scheme	Au	ppm	0.01	50	FA51	Ag	ppm	1	100	GA02	Cu	ppm	50	-	GA50S	Pb	ppm	50	-	GA50S	Zn	ppm	50	-	GA50S	Mn	ppm	50	-	GA50S	As	ppm	10	-	XR02	Sb	ppm	10	-	XR02	Ba	%	0.01	100	XR02	Ag	ppm	5	10000	GA30
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Verification of sampling and assaying	<ul style="list-style-type: none"><li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li><li><i>The use of twinned holes.</i></li><li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li><li><i>Discuss any adjustment to assay data.</i></li></ul>	<ul style="list-style-type: none"><li>Calculations of significant intersections are carried out by Competent Person John Andrew Levings, FAusIMM.</li><li>Twinned holes are generally not used or considered to be required.</li><li>Electronic data is stored and reported using the password-protected Geobank software. Data is network backed-up across several physical sites (Romang Island, Jakarta Office, Sydney Office). Physical assay reports are filed in Jakarta office.</li><li>All data entry is under control of a specialist database geologist.</li><li>No adjustments to assay data are carried out.</li></ul>																																																							
Location of data points	<ul style="list-style-type: none"><li><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></li><li><i>Specification of the grid system used.</i></li><li><i>Quality and adequacy of topographic control.</i></li></ul>	<ul style="list-style-type: none"><li>All drill collars are surveyed by company surveyors using a Total Station and tied in to an independently verified system of triangulation survey stations.</li><li>All coordinates are quoted in UTM-UTS Zone 52 South.</li><li>Topographic control is excellent and was established using the LIDAR system (plus or minus 0.3m).</li></ul>																																																							
Data spacing and distribution	<ul style="list-style-type: none"><li><i>Data spacing for reporting of Exploration Results.</i></li><li><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></li><li><i>Whether sample compositing has been applied.</i></li></ul>	<ul style="list-style-type: none"><li>Data spacing (drill-hole spacing) is variable and appropriate to the geology. As this is an exploration project, infill drilling is often necessary to confirm interpretations. In general a drillhole spacing of 40 metres is used in breccias style mineralisation and 80m for stratabound mineralisation.</li><li>Sample compositing is not used in reporting exploration results.</li></ul>																																																							
Orientation of data in relation to geological structure	<ul style="list-style-type: none"><li><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></li><li><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></li></ul>	<ul style="list-style-type: none"><li>The breccia – style mineralisation below the Manganese is often irregular and drilling is oriented to intersect as perpendicular as possible to the gross strike and dip of the deposits. The VMS mineralisation is sub horizontal. 60 degree inclined angled holes are used as a compromise to test the flat-lying exhalative zones and any steeper footwall stringer mineralization.</li></ul>																																																							



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>No material sampling bias is considered to have been introduced by the drilling direction</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Company security personnel and Mobile Brigade Police accompany the samples from the base camp (by porter, company boat and charter plane) to Kupang in West Timor. At this point the samples are dispatched by commercial flight door to door courier to ITS laboratory in Jakarta.</li> <li>This is considered to be a secure and reasonable procedure and no instances of tampering with samples have occurred since drilling commenced in 2008.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Audits of sampling procedure have been completed in 2011 and 2013 by Micromine Consulting and Mining Associates respectively. No material issues were raised.</li> </ul>

## 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"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Robust's tenure on Romang Island is under the Indonesian national Izin Usaha Pertambangan or Mining Business License (IUP) system. Robust, has a direct 70% interest in the 5 IUPs totaling 10,000 Ha through the title holder company PT Gemala Borneo Utama. The Robust IUPs are in exploration stage and must be converted to production stage by March 2015. It is anticipated that the conversion will take place in the first half of 2014. The other 30% shareholder in the IUPs is Indonesia's Salim Group. Salim group is also a major shareholder in Robust resources Limited.</li> <li>Robust's IUPs are in "production forest" and as such require a "borrow and use" permit from the Indonesian department of forestry. Robust has current borrow and use permits for its 5 IUPs.</li> <li>All 5 Robust IUPs have been published on the Indonesian Mines Department "Clean and Clear" list.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>In 1998 and 1999 Billiton (now BHP Billiton) conducted 2 diamond drilling programs totalling 14 holes within the Lakuwahi Caldera. Robust's first drill holes in 2008 was numbered LWD015 in recognition of the 14 prior Billiton holes. Results obtained by Robust are entirely consistent with the earlier results from the Billiton work.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation at Lakuwahi is considered to be hydrothermal in type. The mineralisation occurs in a caldera setting. Three styles of mineralisation have been recognized.</li> <li>Breccia – style containing galena, sphalerite, chalcopyrite, barite, pyrite, gold and silver (and oxidized portions of this type).</li> <li>Exhalative VMS. Laterally extensive horizon containing galena, sphalerite, chalcopyrite, barite, pyrite, gold and silver</li> <li>Manganese Oxide: replacement of limestone.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>See separate table in this report.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>○ dip and azimuth of the hole</li> <li>○ down hole length and interception depth</li> <li>○ hole length.</li> <li>• 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.</li> </ul>	
Data aggregation methods	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• Informing Samples have been composited to one metre lengths honouring the geological boundaries and adjusted where necessary to ensure that no residual sample lengths have been excluded (best fit).</li> <li>• Samples are selected based on geological interpretation of a &gt;30% Mn 3D wireframe.</li> <li>• Grade capping was deemed inappropriate for Mn values.</li> <li>• Metal equivalents are not used.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• 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').</li> </ul>	<ul style="list-style-type: none"> <li>• In general down-hole lengths are reported due to the irregular nature of the breccia style mineralisation.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Plan views and sectional views are included in this report.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• All intersections within the mineralised wireframe, both high and low grade are tabulated in this report.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable to this report.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>• Infill drilling for better definition.</li> <li>• Additional assaying of Fe, Si, Al, P and other key elements important in a DSO.</li> </ul>

### 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"> <li>• 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.</li> <li>• Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>• A selection of drill holes (~5%) were selected for validation purposes by MA. Original drill logs, collar pickups, down hole survey data and core photos were inspected.</li> <li>• Drill core inspection on-site.</li> <li>• GBU employs a database GIS geologist in Jakarta to manage the geological database.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>• If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>• Ian Taylor (AusIMM(CP)) of Mining Associates visited the property in September of 2013. Field exposures and numerous drill hole s were examined during this visit, and an assessment was made of the procedures for logging, sample preparation, quality control and SG measurement.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The mineral resource estimate was supervised by Mr Andrew J Vigar of Mining Associates and is the JORC competent person.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>The main data used to interpret the geometry of mineralised structures has been surface mapping and drilling.</li> <li>Mineral resource interpretation was conducted in 3D space using OK to inform a block model. A common alternate method is a 2D metal accumulation method. This method would provide less detail through the profile of the deposit, in general the deposit is not extensive enough to consider 2D metal accumulation.</li> <li>Natural breaks in the mineralisation occur at 10% and 30% Mn, only the high grade has been modelled to date, there is potential to define a &gt;10% mineralisation amenable to beneficiation.</li> <li>Mineral Resource interpretation was conducted in 3D space using wireframes &gt;30% Mn</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The majority of Mn mineralisation lies within the limestone replacement within manganese valley. (300m EW and between 50 and 150 m NS).</li> <li>Minor manganese mineralisation (100 m x 50 m) has been identified at Batu Hitam West.</li> <li>Generally the mineralisation occurs from surface and is up to 20 m thick.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>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.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>Estimation is undertaken in Surpac.</li> <li>Kriging of 20 x 20 x 10 m blocks, utilising sub blocks down to 5 x 5 x 2.5m for volume definition.</li> <li>Drill hole samples were composited to 1 metre.</li> <li>Experimental variograms were modelled in Supervisor. Downhole variograms provide very low nuggets not replicated in the directional variograms.</li> <li>Variogram model, 0.2 nugget, C1, 0.55; R1, 40 m and C2, 0.43; R2, 65 m. Anisotropy ratios of 1.625 and 2.</li> <li>Search neighbourhood: min samples 3, max 15, search 65 m, anisotropy orientated bearing 29° plunge -6° and dip of -19°, anisotropic ratios of 1.625 and 2 for semi-major and minor axis.</li> <li>No other variables were considered in this resource estimate. Sufficient additional data is not available to estimate key elements to define smelter feed quality.</li> <li>Block size was 20 m x 20 m x 5 m which considers mineralisation orientation and drill pattern. (approximately half the drill spacing).</li> <li>Sub-blocking of 5 m x 5 m x 2.5 m for volumes approximating potential selective mining unit. Ore loss and dilution for reserve conversion has not been applied.</li> <li>Wireframes were constructed based on surface mapping, and drill hole intercepts greater than at 30% Mn. Wireframes were used to constrain the estimates in 3D space.</li> <li>Informing samples were composited to one metre, no outlier grades were identified (no grade capping)</li> <li>Global mean grades for estimated blocks and drillhole samples compared closely to estimates.</li> <li>Ordinary kriging estimates were compared to nearest neighbour and inverse distance estimates, to assess the impact of data clustering semivariograms and sensitivity to estimation</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>method..</p> <ul style="list-style-type: none"> <li>No reconciliation data is available for Lakuwahi project as no mining has taken place.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are based on dry tonnes. Density samples were oven dried for 12 hours prior to using the immersion method to determine the dry density of the host rock.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>The mineral resource has been reported above 30% Mn as there is a reasonable assumption this will be a Direct Shipping Ore (DSO) as advised by the client.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Manganese mineralisation is enriched close to the surface; Robust envisages shallow open pits targeting DSO material.</li> <li>Assumptions are reasonable that the Fe, Si, Al and P levels are suitable for a DSO, further work is strongly recommended to quantify these parameters.</li> <li>This is an inferred resource and the project is in early stages of development, it is Robust's intention to obtain qualification of DSO specification before work on an indicated resource is commenced.</li> <li>MA notes these are reasonable assumptions based on experience with other Mn projects and should not be regarded as rigorous at this stage of the project.</li> <li>MA notes that the Indonesian government currently has a levy on export of DSO.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No specific metallurgical work has been completed on the Lakuwahi manganese resource.</li> <li>This is an inferred resource and the project is in early stages of development. It is Robust's intention to conduct preliminary metallurgical test work before progress on an indicated resource is commenced.</li> </ul>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary investigations have identified a number of potentially suitable locations for storage of waste and tailings. Acid rock drainage testing has not been performed at this early stage of development, MA notes there is abundant limestone at the project.</li> <li>Preliminary investigations have identified that minor amounts of base &amp; heavy metals contained in the manganese mineralisation have very low solubility under natural environmental conditions (eg. Pb, Zn, Cd etc) Further environmental test work is planned to qualify metal and element deportment under mining and processing conditions and market applications.</li> <li>Flora and fauna assessments of the site are ongoing and have raised no particularly sensitive issues.</li> <li>The mine site sits within re-growth forestry area and farm lands.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>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.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for</li> </ul>	<ul style="list-style-type: none"> <li>For the specific gravity of rocks, an SG sample of split core is taken from each assay sample interval within mineralised and non-mineralised zones.</li> <li>Each sample is a minimum of 5 cm long and up to 25 cm.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</p> <ul style="list-style-type: none"> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>The samples are dried in a 105-110°C oven for 12 hours, and then allowed to cool to room temperature.</li> <li>The sample is then weighed dry on a scale with 0.01 gram accuracy.</li> <li>The sample is attached to a harness connected to the scale and lowered into a bucket of water in order to determine its mass in water.</li> <li>The wet sample is then weighed dry on a scale with 0.01 gram accuracy.</li> <li>Volume of the sample = mass of wet sample in air – mass of sample in water.</li> <li>Specific gravity = mass of dry sample in air / volume sample.</li> <li>The Bulk Density for Mn ore is currently assigned as 2.1.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>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).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Data quality, drill hole spacing and geological continuity and model have all been considered sufficient to classify the mineralisation as a resource.</li> <li>High confidence in the quality of the data justified the classification of inferred and indicated resources; the data quality does not preclude measured resources.</li> <li>Geological continuity has been demonstrated at 40 m grid spacing over the entire strike of Manganese Valley. The mineralisation commonly outcrops demonstrating continuity at surface.</li> <li>Product specification, mining and mineral export for DSO requires further quantification before confidence in "reasonable prospects for economic extraction" allows an indicated classification, for this reason the entire mineralisation is classified Inferred.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>No external audits or reviews of the resource estimate have been carried out to date.</li> <li>Previous inferred resource announced (ASX) at Lakuwahi does not include a Mn resource.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>There is sufficient geological and sampling information to define an Inferred resource.</li> <li>The quality of the data does not preclude the classification of indicated or measured resources.</li> <li>More details are required of the product specification particularly Fe, Si, Al and P levels to ensure the material is suitable for DSO, the inferred resource is presently assumed to be suitable.</li> <li>The ordinary kriging result, due to the high level of smoothing, should only be regarded as a global estimate, and is suitable as a life of mine planning tool. Should local estimates be required for detailed mine scheduling techniques such as Uniform conditioning or conditional simulation would be required.</li> </ul>

## Section 4 Estimation and Reporting of Ore Reserves

(No ore reserves are reported)