

ASX ANNOUNCEMENT

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#### **MAJOR PROJECTS**

Ammaroo Rock Phosphate Karinga Lakes Brine Potash Ross River: IOCGU

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Listings Officer Company Announcements ASX Limited, Melbourne

### Ammaroo South Phosphate Resource and Exploration Targets

Rum Jungle Resources is pleased to announce another Inferred phosphate resource estimated at 70 Mt at 13%  $P_2O_5$  using a 10% cut-off. Ammaroo South is a satellite rock phosphate deposit along strike from Rum Jungle Resources' flagship Northern Territory Ammaroo deposit. Ammaroo South is between 53 km and 78 km southeast of the centre of the main Ammaroo Resource. Both deposits lie on the northern palaeo-shore of a Cambrian sea which suggests the potential existence of a major phosphate province within the tenements shown below.

Only a limited amount of work has been carried out at Ammaroo South but it was necessary to undertake resource estimation as precursor to applying for more secure tenure over this area. At this stage, no further work is planned at Ammaroo South.



Figure 1: Ammaroo South shown in relation to the main Ammaroo Phosphate Project and infrastructure. Blue indicates granted titles held by Rum Jungle Resources and its subsidiaries and a JV. These tenements follow the prospective Cambrian shoreline. The Central Australian Railway and Stuart Highway (green)) are shown.

The Ammaroo South deposit was discovered prior to the main Ammaroo resource. Ammaroo South was found by following-up:

- prospective stratigraphy and putative phosphate in waterbore RN13015
- Rum Jungle Resources' assays of the stratigraphic hole NTGS ELK3
- reconnaissance aircore drilling by Aragon Resources Ltd done in 2009 and previously reported by them.

Rum Jungle Resources undertook more systematic aircore drilling in 2010, which resulted in the delineation of what was then called the Ammaroo 1 prospect. Further gridded reverse circulation resource definition drilling was undertaken in 2012. Collectively, the estimates reported here are based on 32 aircore holes drilled by Aragon Resources during 2009 and 193 aircore and reverse circulation holes drilled by Rum Jungle Resources since 2010 for a combined 12,032 metres of drilling.

Mineralisation is divided into two areas, north and south, bisected by a 3.1 km wide cultural exclusion zone which runs along the Sandover River.



Figure 2: Ammaroo South showing the northern and southern areas bisected by a cultural exclusion zone along the Sandover River. The area shown in green is the Inferred Resource.

The northern zone contains an Inferred Resource, drilled on nominal 400 m centres. Table 1 shows the Resource estimates for selected  $P_2O_5$  cut off grades. This Resource was independently estimated by Jonathon Abbott of MPR Geological Consulting Pty Ltd and is reported in accordance with the JORC 2012 code.

Cut Off P <sub>2</sub> O <sub>5</sub> %	Mt	P <sub>2</sub> O <sub>5</sub> %	Al <sub>2</sub> O <sub>3</sub> %	CaO%	Fe <sub>2</sub> O <sub>3</sub> %	K <sub>2</sub> 0%	MgO%	MnO₂%	Na₂O%	SiO <sub>2</sub> %	TiO₂%	U₃O <sub>8</sub> ppm
5	170	9.5	5.0	13	1.8	0.6	0.3	0.09	0.07	66	0.3	21
10	70	13	3.8	18	1.4	0.4	0.3	0.06	0.06	59	0.2	26
15	13	17	2.8	25	1.1	0.3	0.2	0.05	0.06	50	0.2	33
Table 4. Assure as a Castle Informed Descence												

Table 1: Ammaroo South Inferred Resource.

MPR's review of the Ammaroo South deposit included construction of an Ordinary Kriged model from 1 m down-hole composited assay grades from aircore and reverse circulation drilling within mineralised domain wireframes capturing composites grading more than approximately 5% and 10%  $P_2O_5$  respectively. Portions of the model based on approximately 400 m by 400 m spaced drilling are reported as Mineral Resources. Model estimates for more broadly sampled areas have been used for estimation of Exploration Targets.

The Mineral Resource estimates extend over approximately 6.4 km of strike with an average width of approximately 3.1 km, and an average thickness of around 7.6 m. The estimates extend to around 60 m depth, with approximately 90% from depths of less than 50 m.

No density information is available for Ammaroo South. The estimates include a density of 1.7 t/bcm consistent with the value adopted for the Ammaroo Project on the basis of immersion density measurements of diamond core.

The Ammaroo South Resource is surrounded by an area of exploration potential (shown in pink in Figure 2) in which there is insufficient data to yet define a Mineral Resource. A second area of exploration potential is interpreted south of the cultural exclusion zone (shown in blue in Figure 2). Drilling in these areas is generally spaced at around 1 km to 2 km by 1 km by 1.5 km and broader.

Collectively within these two areas of exploration potential, broadly spaced drilling suggests the presence of **an Exploration Target of around 200 Mt to 400 Mt at 7% to 10% P<sub>2</sub>O<sub>5</sub> at a cut off grade of 5% P<sub>2</sub>O<sub>5</sub>, and 50 to 100 Mt at 12% to 15% P<sub>2</sub>O<sub>5</sub> at a cut off of 10% P<sub>2</sub>O<sub>5</sub>. These estimates are based on broad spaced drilling completed by Rum Jungle Resources and Aragon Resources. The potential quantities and grades are conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain that future exploration will result in estimation of a Mineral Resource. The Exploration Target estimates are derived from portions of the Ordinary Kriged model (pink and blue in Figure 2) with approximately 1.5 to 2 km by 1 km and broader spaced drilling with appropriate factoring and rounding to generate a range of tonnages and grades.** 

This document may contain forward-looking statements. Certain material factors or assumptions were applied in drawing a conclusion or making a forecast or projection as reflected in the forward-looking information. Actual values, results or events may be materially different to those expressed or implied.

The information in this report that relates to the Mineral Resource estimates and Exploration Targets is based on information compiled by Jonathon Abbott, a Competent Person who is a Member of the Australian Institute of Geoscientists. Jonathon Abbott is a full time employee of MPR Geological Consultants Pty Ltd and is an independent consultant to Rum Jungle Resources.

Mr Abbott has sufficient experience that is 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 Mineral Resources and Ore Reserves".

*Mr* Abbott consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Jonathon Abbott Consulting Geologist MPR Geological Consulting Pty Ltd

The information in this report that relates to exploration results and economic potential is based on information compiled by Mr David Muller, who is a Fellow of the Australasian Institute of Mining and Metallurgy.

Mr Muller is Managing Director of Rum Jungle Resources Ltd and an employee of the Company. Mr Muller has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity to 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".

*Mr Muller consents to the inclusion in this report on the matters based on their information in the form and context in which it appears.* 

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DW Muller BSc, MSc, MBA, FAusIMM Managing Director

# JORC Code, 2012 Edition – Table 1 report template

# Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <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> </ul>	<ul> <li>Within the current study area the drill hole database comprises 32 aircore (AC) holes drilled by Aragon Resources during 2009 and 14 AC and 179 reverse circulation (RC) holes drilled by RUM for 12,032 m of drilling.</li> <li>The dataset used for estimation of Mineral Resources is dominated by RUM RC drilling (82%), with RUM and Aragon AC holes contributing 3% and 12% respectively.</li> <li>Details of the Aragon sampling and assaying are unclear. These holes provide only a small proportion of the dataset, and the lack of detailed information does not significantly affect confidence in the current estimates.</li> </ul>
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul> <li>AC and RC holes were generally sampled over 1 to 4 m down hole intervals. The majority of mineralised samples were collected over 1 m down-hole intervals.</li> <li>RUM AC and RC sub-samples were collected by cone or riffle splitting.</li> </ul>
	Aspects of the determination of mineralisation that are Material to the Public Report.	Hand-held XRF measurements were used to aid selection of intervals for assaying. These results were not used for the current modelling.
	<ul> <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> <li>Primary samples from RUM's drilling were submitted to AMDEL Bureau Veritas laboratories for analysis by ICP. Laboratory sample preparation included jaw crushing to a nominal 2 mm and riffle spiting to 100 g and pulverising to nominally 90% passing 75 micron.</li> </ul>
Drilling techniques	<ul> <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> <li>RUM's RC drilling utilised face sampling bits with diameters of generally 112 to 121 mm.</li> <li>All holes are vertical.</li> </ul>
Drill sample recovery	<ul> <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> <li>Measures taken to ensure the representivity of RUM AC and RC sub-sampling include close supervision by field geologists, use of appropriate sub-sampling methods, routine cleaning of splitter and cyclones, and rigs with sufficient capacity to provide generally dry, high recovery RC samples.</li> <li>The available information suggests that the RC and AC drilling and sampling is representative and does not include a systematic bias due to preferential sample loss or gain.</li> </ul>
Logging	<ul> <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)</li> </ul>	<ul> <li>Aragon and RUM RC and AC holes were routinely geologically logged by industry standard methods. Subsamples of all RUM RC chips were retained in chip trays for the future reference.</li> <li>Geological logs are available for around 95% of the study area drilling.</li> <li>The geological logging is qualitative in nature, and</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>of sufficient detail to support the current resource estimates.</li> <li>Hand-held XRF measurements were used to aid selection of intervals for assaying. These results were not used for resource estimation.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <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> <li>RC samples were collected over generally 1 m down-hole intervals and sub-sampled with a cone splitter or rarely a three tier riffle splitter. Measures taken to ensure the representivity of RC and AC sub-sampling include close supervision by field geologists, use of appropriate sub-sampling methods, routine cleaning of splitter and cyclones, and rigs with sufficient capacity to provide generally dry, high recovery samples.</li> <li>Information available to demonstrate the representivity of AC and RC sub-sampling includes field duplicates.</li> <li>The available information demonstrates that the sub-sampling methods and sub-sample sizes are appropriate for the grain size of the material being sampled, and provide sufficiently representative sub-samples for resource estimation.</li> </ul>
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Quality of assay data and laboratory tests	<ul> <li>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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>Field XRF measurements are regarded as semi- quantitative and these results were used only to aid selection of samples for assaying. They were not included in resource estimates.</li> <li>Assay quality control procedures adopted by RUM include certified reference standards, blanks and external laboratory checks. These results have established acceptable levels of precision and accuracy for the assays included in the current estimates.</li> <li>Consistent with the larger dataset available for Ammaroo, standards assay results and comparisons with CaO assays suggest that ICP P<sub>2</sub>O<sub>5</sub> assays from RUM's Ammaroo South drilling are biased slightly low. For the current estimates, P<sub>2</sub>O<sub>5</sub> assays were multiplied by a factor of 1.03 to compensate for this apparent bias.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul> <li>No new drill hole results are reported in this announcement.</li> </ul>
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	<ul> <li>The sampling database is hosted in a secure, remote location and regularly backed-up by a specialist company who also undertake data entry and QA/QC.</li> <li>Laboratory assay files are sent directly to the database custodians and merged directly into the database to avoid transcription errors.</li> <li>All data entry is double checked internally and by the database custodians.</li> <li>Drill data were supplied to MPR in a Microsoft Access format database extract. Consistency checking between and within the database tables by MPR showed no significant inconsistencies.</li> </ul>
	<ul> <li>Discuss any adjustment to assay data.</li> </ul>	• Standards assay results, and comparisons with CaO assays suggest that, consistent with the larger dataset available for Ammaroo the ICP $P_2O_5$ assays from RUM's drilling are biased slightly low. For the current estimates, $P_2O_5$ assays were multiplied by a factor of 1.03 to compensate for this apparent bias.

	<ul> <li>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.</li> </ul>	<ul> <li>Most collar coordinates were surveyed by handheld GPS. The resource area drilling includes two RUM RC holes with only planned collar coordinates.</li> <li>No holes were down-hole surveyed. For the comparatively widely spaced and shallow vertical holes the lack of down-hole surveys does not affect confidence in resource estimates.</li> </ul>
Location of data points	Specification of the grid system used.	<ul> <li>All surveying was undertaken in Map Grid of Australia 1994 (MGA94) Zone 53 coordinates.</li> </ul>
	Quality and adequacy of topographic control.	<ul> <li>The mineralisation does not outcrop.</li> <li>Topographic control is adequate for the current estimates.</li> </ul>
	<ul> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul> <li>Drill hole spacing within the resource area approximates 400 by 400 m. Areas hosting the exploration targets have been sampled by drill hole spaced at around 1 to 2 km by 1 to 1.5 km and broader.</li> </ul>
Data spacing and distribution	<ul> <li>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.</li> </ul>	<ul> <li>The data spacing has established geological and grade continuity sufficiently for the current Mineral Resource Estimates.</li> </ul>
	<ul> <li>Whether sample compositing has been applied</li> </ul>	<ul> <li>The Ordinary Kriged model constructed for the current review is based on 1 m down-hole composited assays.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>The mineralisation is flat lying to gently undulating, and perpendicular to the vertical drill holes.</li> <li>The drilling orientation achieves un-biased sampling of the mineralisation.</li> </ul>
	The measures taken to ensure sample security.	<ul> <li>For RUM's drilling all sample collection, bagging and labelling was undertaken onsite under the supervision of RUM geological staff.</li> <li>All RUM RC and AC samples were transported by road directly from site to the assay laboratory, with the calico bag samples sealed in polyweave bags within a bulka bag.</li> <li>RUM's chip trays are stored at their Alice Springs office.</li> <li>Results of field duplicates and inter-laboratory checks, and the general consistency of results between sampling phases and drilling methods provide confidence in the general reliability of the resource data.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>MPR geological consultants independently reviewed the quality and reliability of the resource data.</li> <li>MPR consider that the sample preparation, security and analytical procedures adopted for the Ammaroo South drilling provide an adequate basis for the current Mineral Resource estimates.</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> <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> <li>The Ammaroo South resource lies within granted exploration license EL 25185 held by RUM and its subsidiaries</li> <li>Work was approved by the NT Department of Mines and Energy and the Central Land Council before commencement.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Previous work on EL 25185 undertaken by Aragon provides 12 % of the resource dataset, and 26% of the data used for estimation of Exploration Targets.</li> <li>All other work on the project has been by RUM.</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	• Ammaroo South is a stratabound, sedimentary phosphate deposit located on Cambrian shoreline of the Georgina Basin. It is a similar style of mineralisation to other phosphate deposits in the Georgina Basin. Lithology is reasonably consistent across the entire deposit.
Drill hole Information	<ul> <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:</li> <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> <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>	<ul> <li>No new individual drill hole results are reported in this announcement.</li> </ul>
Data aggregation methods	<ul> <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> </ul>	<ul> <li>No new individual drill hole results are reported in this announcement.</li> </ul>
	<ul> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>The estimated resources do not include equivalent values.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <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> <li>The mineralisation is flat lying to gently undulating, and perpendicular to the vertical drill holes, with down-hole lengths representing true thicknesses.</li> </ul>

Criteria	JORC Code explanation	Commentary
Diagrams	<ul> <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> <li>Appropriate diagrams are included in the announcement.</li> </ul>
Balanced reporting	<ul> <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> <li>No new individual drill hole results are reported in this announcement.</li> </ul>
Other substantive exploration data	<ul> <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> <li>Mineral Resources were estimated from drill hole assay data, with geological logging used to aid interpretation of mineralised domains.</li> </ul>
Further work	<ul> <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> <li>Further extensional and infill drilling may be carried out in the future, but there is no commitment to this work.</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> <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> <li>Resources were estimated from drill hole data supplied to MPR in a Microsoft Access database.</li> <li>Consistency checking between and within the database tables by MPR showed no significant inconsistencies.</li> </ul>
Site visits	<ul> <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> <li>Mr Abbott has not visited Ammaroo South. A site visit was not warranted due to the early stage of project evaluations, lack of mineralised outcrop, lack of current field activities, and general similarity of mineralisation and drilling to Ammaroo.</li> <li>Mr Abbott visited the main Ammaroo Phosphate Project from the 12<sup>th</sup> and 13<sup>th</sup> of April 2011 and the 15<sup>th</sup> to 16<sup>th</sup> of May 2012. The site visits included inspection of mineralisation exposures in costeans, and drilling and sampling activities, and discussions of the details of the project's geology and drilling and sampling with RUM geologists gaining an improved understanding of the geological setting and mineralisation controls, and the resource sampling activities.</li> </ul>
Geological interpretation	<ul> <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> <li>Ammaroo South is at an early stage of evaluation and detailed geological controls have not been confidently established. Any resulting uncertainty in resource estimates is captured by classification of the estimates as Inferred.</li> <li>Mineralised domains used for the current study comprise a Low Grade envelope and High Grade internal domain capturing 1 m composite grades greater than nominally 5% and 10% P<sub>2</sub>O<sub>5</sub> respectively. These domains are subdivided into north and south zones separated by an approximately 3.1 km wide east-west trending cultural exclusion zone.</li> <li>The mineralised domains were interpreted with reference to geological logging and are trimmed by low grade areas and interpreted basement highs, where mineralisation has been not developed. The mineralised domains are consistent with the geological understanding of the flat lying, stratabound mineralisation.</li> <li>Investigations of alternative interpretations are unnecessary at the current level of evaluations.</li> </ul>
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>For the northern zone the combined mineralised domains extend around 11.5 km east-west by 3.2 km north-south with an average thickness of around 6.2 m.</li> <li>In the southern area the combined mineralised domains extend around 9.5 km east-west by 2.6 km north-south with an average thickness of around 5.2 m.</li> <li>Mineral Resource Estimates are limited to the more closely drilled portions of the northern zone. They extend over approximately 6.4 km of strike with an average thickness of around 7.6 m.</li> <li>The resource estimates are overlain by an average of 38 m of barren material and extend to around 60 m depth, with approximately 90% from depths of less than 50 m.</li> </ul>
Estimation and modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining,</li> </ul>	<ul> <li>MPR's review of the Ammaroo South deposit included construction of an Ordinary Kriged model from 1 m down-hole composited assay grades from AC and RC drilling within mineralised domain wireframes</li> </ul>

Criteria	JORC Code explanation	Commentary
	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.	<ul> <li>capturing zones of continuous mineralisation grading more than approximately 5% and 10% P<sub>2</sub>O<sub>5</sub> respectively.</li> <li>Portions of the model based on approximately 400 by 400 m spaced drilling are reported as Mineral Resources.</li> <li>Estimates for more broadly sampled areas have been used for estimation of Exploration Targets.</li> <li>The model includes estimates for P<sub>2</sub>O<sub>5</sub>, Al<sub>2</sub>O<sub>3</sub>, CaO, Fe<sub>2</sub>O<sub>3</sub>, K2O, MgO, MnO, Na<sub>2</sub>O, SiO<sub>2</sub>, TiO<sub>2</sub> and U<sub>3</sub>O<sub>8</sub>.</li> <li>The broad sampling available for Ammaroo South poorly defines grade continuity within the mineralised domains preventing reliable variogram modelling. The current estimates use variograms modelled for the 2014 Ammaroo resource estimates.</li> <li>No upper cuts were applied to the estimates. This reflects the generally moderate variability of most attributes, and ameliorates the risk of understating secondary attribute grades.</li> <li>The Inferred Resources were generally extrapolated to a maximum of 200 m beyond drilling.</li> <li>Estimation included a six pass, octant based search strategy, with a hard boundary between the low grade and high grade domains.</li> <li>Grade estimation included un-folding of composite locations using the top of the mineralised domain as a reference surface.</li> <li>Micromine software was used for data compilation, domain wire-framing, and coding of composite values, and GS3M was used for resource estimation.</li> <li>The estimation technique is appropriate for the mineralisation style.</li> </ul>
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	<ul> <li>There have been no previous resource estimates for Ammaroo South.</li> <li>There has been no production from the project.</li> </ul>
	<ul> <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> </ul>	<ul> <li>In addition to P<sub>2</sub>O<sub>5</sub>, the resource model includes estimated Al<sub>2</sub>O<sub>3</sub>, CaO, Fe<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, MgO, MnO, Na<sub>2</sub>O, SiO<sub>2</sub>, TiO<sub>2</sub> and U<sub>3</sub>O<sub>8</sub> grades.</li> <li>Estimated resources make no assumptions about recovery of by-products.</li> </ul>
	<ul> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	<ul> <li>Grades were estimated into 100 by 100 by 1 m blocks Plan view dimensions of the blocks approximate one quarter the drill hole spacing in the closest drilled portions of the deposit.</li> <li>Estimation included a six pass, octant based search strategy, with a hard boundary between the low grade and high grade domains.</li> <li>Search radii and data requirements used for estimation of Mineral Resources range from 300 by 300 by 4 m (4 data) for search pass 1 to 600 by 600 by 8 m (2 data) for search pass 3.</li> <li>Search passes 4 to 6 were used only for estimation of Exploration Targets and are not included in Mineral Resource estimates.</li> <li>Grade estimation included un-folding of composite locations using the top of the mineralised domain as a reference surface.</li> </ul>
	<ul> <li>Any assumptions behind modelling of selective mining units.</li> </ul>	<ul> <li>The estimates are intended to reflect medium to large scale open pit mining, with ore definition by close spaced grade control sampling and tight vertical selectivity.</li> <li>Details of potential mining parameters are unclear reflecting the early stage of project evaluations.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>Any assumptions about correlation between variables.</li> </ul>	The modelling did not include specific assumptions     about correlation between variables.
	<ul> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	The mineralised domains are consistent with geological interpretation of mineralisation controls.
	<ul> <li>Discussion of basis for using or not using grade cutting or capping.</li> </ul>	• No upper cuts were applied to the estimates. This reflects the generally moderate variability of most grade attributes, and ameliorates risk of understating secondary attribute grades.
	• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	<ul> <li>Model validation included visual comparison of model estimates and composite grades, and trend (swath) plots.</li> <li>No production data is available.</li> </ul>
Moisture	<ul> <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>	Tonnages are estimated on a dry tonnage basis.
Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	• The cut off grades used for resource reporting reflect RUM's interpretation of potential project economics for a large scale operation feeding a beneficiation plant and/or phosphoric acid plant and are consistent with cut offs used for other reported Georgina Basin phosphate resources.
Mining factors or assumptions	<ul> <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> <li>Details of potential mining parameters are unclear reflecting the early stage of project evaluations.</li> <li>The estimates are intended to reflect medium to large scale open pit mining.</li> <li>With a maximum depth of 60 m, and around 90% of resources from depths of less than 50 m, the resources appear amenable to open pit mining.</li> </ul>
<i>Metallurgical factors or assumptions</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 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> <li>Exact economic cut-off grades are not yet known, nor are phosphate recoveries. RUM anticipates that for potential mining, beneficiation would upgrade ore to a suitable specification for sale or as feed to a phosphoric acid plant.</li> </ul>
Environmental factors or assumptions	<ul> <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</li> </ul>	<ul> <li>Environmental studies and process route testing are ongoing as part of a pre-feasibility study currently in progress. Baseline flora and fauna studies have not indicated any impediments to mining or processing at this stage.</li> </ul>

Criteria	JORC Code explanation	Commentary
	been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	<ul> <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 void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>No density measurements are available for Ammaroo South.</li> <li>The estimates include a density of 1.7 t/bcm for all material. This value was derived from 183 wax coated immersion density measurements of oven-dried drill core from 43 diamond holes at Ammaroo.</li> <li>Use of the Ammaroo density to Ammaroo South is justified by the general similarity in mineralisation styles between the two deposits. Any resulting uncertainty in resource estimates is captured by classification of the estimates as Inferred.</li> </ul>
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories.	<ul> <li>Portions of the block model based on approximately 400 by 400 m spaced drilling are reported as Inferred Mineral Resources.</li> <li>Estimates for more broadly sampled areas are not included in Mineral Resource estimates.</li> </ul>
	<ul> <li>Whether appropriate account has been taken of all relevant factors (i.e. 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> </ul>	The resource classification accounts for all relevant factors.
	Whether the result appropriately reflects     the Competent Person's view of the     deposit.	• The resource classifications reflect the competent person's views of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	• The resource estimates have been reviewed by RUM geologists, and are considered to appropriately reflect the mineralisation and drilling data.
Discussion of relative accuracy/ confidence	<ul> <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 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>	Confidence in the relative accuracy of the estimates is reflected by the classification of estimates as Inferred.