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21 October 2019

Mineral Resource Estimate Update
Minnamoolka Nickel Project, North Queensland

Advanced battery materials developer, Australian Mines Limited ("Australian Mines" or "the Company") (Australia ASX: AUZ; USA OTCQB: AMSLF; Frankfurt Stock Exchange: MJH) advises that it has updated the Mineral Resource Estimate for its 100%-owned Minnamoolka Nickel Project in North Queensland.

A Mineral Resource Estimate for the Minnamoolka Nickel Project had previously been undertaken by Golder Associates and subsequently reported by Metallica Minerals Limited in 2013 in accordance with the 2004 edition of the JORC code.

Australian Mines commissioned and has now received, the following updated Mineral Resource Estimate for the Minnamoolka nickel deposit in accordance with the 2012 edition of the JORC Code.[1]

JORC Classification	Tonnes* (million)	Nickel (%)	Cobalt (%)
Measured	-	-	-
Indicated	11.9	0.67	0.03
Inferred	2.4	0.60	0.02
Total	**14.2**	**0.66**	**0.03**

** Tonnages rounded to the nearest 100 Kt. Differences may occur in totals due to rounding. Lower cut-off grade is 0.45% nickel.*

For clarity, Australian Mines notes that the updated Mineral Resource Estimate reflects the change from JORC 2004 to JORC 2012 standard only, and there have been no new drill results since the previous estimate was reported by Metallica Minerals in 2013[2].

******ENDS******

[1] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).
[2] The Mineral Resource Estimate calculated in accordance with JORC2004 is included at Appendix 2 of Australian Mines' Quarterly Activities Report dated 30 June 2019.

MEMORANDUM

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To: Australian Mines Limited

Cc:

Date: 18 October 2019

From: David Williams, Chris Adams

CSA Global Report Nº: R434.2019

Re: **Minnamoolka Ni Co Deposit – Mineral Resource Estimate**

EXECUTIVE SUMMARY

CSA Global Pty Ltd (CSA Global) was engaged by Australian Mines Limited (Australian Mines) to update and report a Mineral Resource estimate (MRE) for the Minnamoolka Nickel-Cobalt laterite deposit at its Sconi Project, located in Queensland, Australia. An MRE was previously undertaken for the Minnamoolka deposit by Golder Associates in 2008, and subsequently reported by Metallica Minerals Limited (Metallica) in 2013 in accordance with the 2004 edition of the JORC code. The updated MRE undertaken by CSA Global is reported in accordance with the 2012 edition of the JORC Code[1].

The updated MRE carried out by CSA Global is presented in Table 1, reported above a Ni (%) cut-off grade of 0.45%.

Table 1: Mineral Resource statement – Minnamoolka Project

JORC Classification	Tonnes* (Mt)	Nickel %	Cobalt %
Measured	-	-	-
Indicated	11.9	0.67	0.03
Inferred	2.4	0.60	0.02
Total	**14.2**	**0.66**	**0.03**

** Tonnages rounded to the nearest 100 Kt. Differences may occur in totals due to rounding.*

The Competent Person and Australian Mines believe there are reasonable prospects for eventual economic extraction of the Mineral Resources. Consideration was given to the relatively shallow depth of the mineralisation, and positive results from the 2018 Feasibility Study for the nearby Greenvale and Lucknow deposits, which share similar geological characteristics to the Minnamoolka deposit.

MINERAL RESOURCE ESTIMATE

The following is a summary of the pertinent information used in the MRE with further details provided in JORC Table 1, which is included as Appendix A.

Geology and Geological Interpretation

The SCONI cobalt-nickel laterite deposits have formed on ultramafic rocks that include serpentinites, meta-gabbros and pyroxenites. These occur as fragments of lower crust material rich in iron, magnesium and nickel, and are thought to be emplaced by shears and faults.

[1] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

Minnamoolka consists of a series of low lying hills underlain by serpentinite and ultramafics over an area of approximately 3 km by 1.5 km. In the elevated areas laterisation is common and is characterised by a Tertiary crust comprising siliceous ferruginous boxwork zones enriched in nickel-cobalt mineralisation and separated by resistant cores of Proterozoic Halls Reward metamorphics. Although bounded by granitoids, pegmatite veins are rare.

Three lithological domains were interpreted based upon the geological logs of drill samples and/or assay grades; a limonite profile exhibiting elevated iron and suppressed magnesium content, a lower saprolite zone with suppressed iron and elevated magnesium content, and a weathered ultramafic bedrock zone defined by drill hole logging. An interpretation of the nickel distribution resulted in the delineation of domains constraining >0.2% nickel. An interpretation of the cobalt distribution resulted in the delineation of domains constraining >0.02% cobalt.

A representative cross section through the Minnamoolka deposit showing the nickel mineralisation is presented in Figure 1.

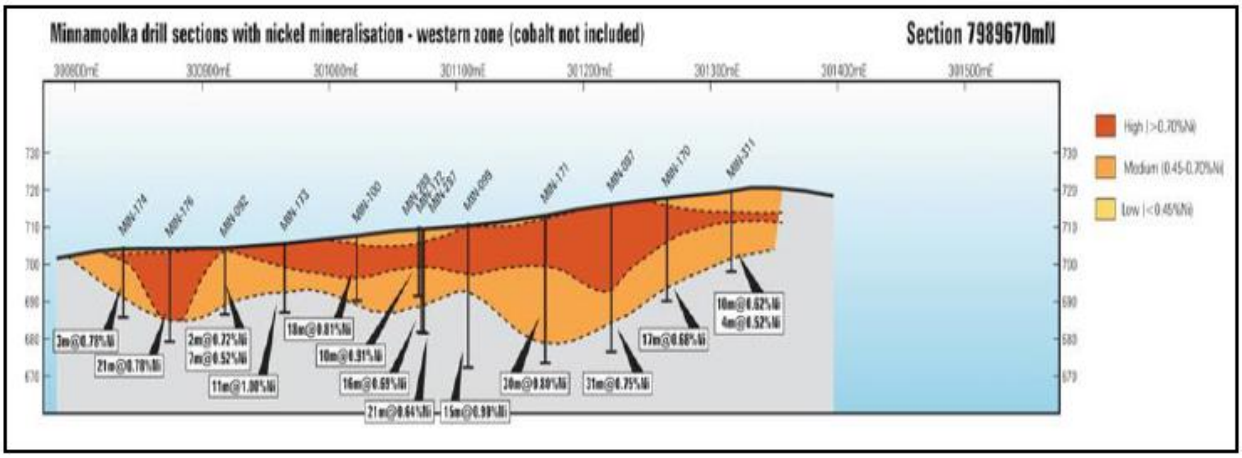

Figure 1: Minnamoolka cross section showing geological profile (by Metallica 2008)

Drilling Techniques

Drilling supporting the MRE was carried out using surface based reverse circulation (RC), and to a lesser extent air core (AC), coring methods. Drill holes utilised in the MRE were drilled by Metallica, previous owners of the project. A total of 342 holes support the Minnamoolka MRE for a total of 6,522m. All holes are vertical in orientation and range in length from 4m to 64m. Information regarding drill hole type was not available for analysis, and the drilling database provided to CSA Global could not be subset by RC and AC drill types.

Sampling and Subsampling

RC holes were drilled by Metallica between 1997 and 2007 with sampling carried out at 1 m intervals. Samples passed through a rig-mounted cyclone and were collected in large plastic bags positioned beneath the cyclone. Samples for dispatch to the analytical laboratory were collected using a spear, with between 1.5 kg and 3 kg collected. RC drilling generally used high air pressure to keep the lateritic samples dry and to maintain good sample recovery. Recovery in the mineralised intervals was recorded as being good to excellent.

Information regarding sampling of AC holes was not available. Details regarding sample recovery in AC is also unknown.

Sample Analysis Method

Drill samples were sent predominantly to ALS, and alternatively SGS analytical laboratories for geochemical analyses. ALS samples were dried then pulverised in a LM5 Mill to achieve a nominal 85% passing 75 µm. A pulp sample was then taken and split down to achieve a 0.5 g sample which was digested in a mixture of three acids (nitric, perchloric and hydrofluoric). The residue was then leached in hydrochloric acid and the elemental concentrations of the solution were determined by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES). Internal standards were used for quality assurance (QA).

SGS sample preparation followed a similar subsampling process. The pulp samples were digested in four-acid to effect as near to total solubility of the metals as possible, with the solution presented to an ICP for element quantification.

Sampling and laboratory performance were monitored by way of externally submitted certified reference materials (CRMs), field duplicates and umpire analyses.

Quality control (QC) results were generally good. Field duplicate results for the main constituent elements were plotted against the original sample assay result, with low to minimal variability observed. Two sets of duplicate samples were collected from selected holes and submitted to either ALS or SGS for laboratory umpire analyses. Results demonstrated no bias of one set of laboratory results over the other. Pulp duplicates were taken for the majority of the drill programmes and results show high level of precision between sample pairs.

Raw QC data was not available for analysis. CSA Global has reviewed the available information in the previously documented MRE (Golder, 2008) and accepts the material conclusions drawn in regard to QAQC of data gathered. QC results are deemed to be acceptable by the Competent Person to support their use in the current MRE.

Resource Estimation Methodology

A block model with parent block sizes of 20 m (X) x 20 m (Y) x 2 m (Z) was constructed, with sub-celling to 1.25 m (X) x 1.25 m (Y) x 0.125 m (Z) used to honour wireframe boundaries. The block parent block sizes are approximately half the drill spacing within areas with tightest drill spacing. Blocks were flagged according to the geological and mineralisation envelopes.

All drillhole assay samples were flagged according to the geological and mineralisation envelopes. Sample populations were statistically analysed to determine if the populations should be split at the weathering unit boundaries (limonite / saprolite / weathered bedrock) and estimation domains defined.

Samples were subsequently composited to 1 m intervals within each defined estimation domain, and the resulting domained composites statistically reviewed to determine appropriate grade top-cut values prior to grade interpolation. Histograms and Log probability plots were used to determine the top-cut values, and the very high-grade samples were reviewed in Datamine Studio software by the Competent Person to determine if they were spatially associated with other high-grade samples.

Downhole and directional variograms were modelled in Snowden Supervisor software using Normal Scores transforms of the composited and top-cut nickel, cobalt, scandium, iron, magnesium, manganese, aluminium, chromium and calcium data. In general, low relative nugget effects were modelled with short range structures typically in the order of 30–40 m associated with sills between 55% and 75% of the population variance. Major variogram directions were typically aligned sub-parallel to the strike of the host geological units.

Grades were interpolated for all available grade variables by Ordinary Kriging (OK), with local dip variations honoured by using Datamine Studio's Dynamic Anisotropy (DA) functionality. Blocks were estimated using a first pass search ellipse equivalent to the full range of the modelled variogram for each variable and estimation domain combination defined. A minimum of 6 and maximum of 12 samples from a minimum of two drillholes per model cell sample selection strategy was employed. Search radii were subsequently increased by a factor of 2 and 4 if cells were not interpolated in the first pass. Cell discretization of 3 x 3 x 2 (X, Y, Z) was employed. The nickel and cobalt mineralisation domains were used as a hard boundary during grade interpolation.

The interpolated grades were validated by way of visual review of cross sections (block model and drill samples presented with same colour legend), swath plots, and comparison of estimation domain mean grades with de-clustered distribution data.

Density was measured from core billets using several methods, including water immersion using a sealed sample, calliper method and sample pits. Moisture content was measured by a metallurgical laboratory and used to derive the dry bulk density values for each sample. Density values were calculated and recorded for each of the main weathering units as logged from drill samples.

Raw density data was not available for analysis. CSA Global has reviewed the available information in the previously documented MRE (Golder, 2008) and accepts the tabulated values for use in the current MRE. Density values were assigned to the block model as dry bulk density values on a per weathering unit basis.

Classification Criteria

Classification of the Mineral Resource models was carried out taking into account the geological understanding of the deposit, quality of the sample data, bulk density data and drillhole spacing.

The Mineral Resource is classified as a combination of Indicated and Inferred material. The Indicated Mineral Resource is supported by a reasonably regular drill pattern spacing of 50 m (EW) x 50 m (NS). The Inferred Mineral Resource is supported by a drill pattern spacing of greater than 50 m (EW) x 50 m (NS) and constrained within the Nickel and Cobalt mineralisation grade shells.

All available data was assessed and the Competent Person's relative confidence in the data was used to assist in the classification of the Mineral Resources.

Reporting Cut-off Grades

The Mineral Resource is reported above a cut-off grade of 0.45% Ni, which was used to report the previous Mineral Resource.

Mining and Metallurgical Methods and Parameters

The deposit has not been historically mined. No mining factors were applied to the Mineral Resource block model. Any mining will be by open pit mining methodologies.

Metal recovery data was determined by variability test work of nickel and cobalt solvent extraction during the in-house pilot plant test work program conducted on samples from Lucknow and Greenvale. Results typically achieved between 90% and 99% from samples with nickel and cobalt grades aligned with expected mine grades as reported from the Mineral Resource model. Lower recoveries of between 85% and 90% were achieved from some lower-grade samples to determine economic cut off grades.

Competent Person Statement

The information in this report that relates to Mineral Resources is based on, and fairly reflects, information compiled by Mr David Williams, a Competent Person, who is an employee of CSA Global Pty Ltd and a Member of the Australian Institute of Geoscientists (#4176). Mr Williams 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 Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr Williams consents to the disclosure of information in this report in the form and context in which it appears.

Appendix 1: JORC 2012 Table 1

Section 1: Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (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.	• All holes used in the Mineral Resource estimate were drilled between 1997 and 2007 for the project owner at the time, Metallica Minerals. • Face sampling Reverse Circulation (RC) drilling collected samples of 1 m drill length were passed through a rig mounted cyclone and collected in large plastic bags. • Holes were sampled by laying the sample bag on its side and using a long trowel (spear). • Between 1.5 kg and 3 kg of sample was collected. • Information regarding sampling of Air Core (AC) holes was not available.
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• Drilling supporting the Mineral Resource estimate was reverse circulation (RC) and air core (AC) drilled since 1997. • Historical drilling (1969 - 1990) was a mix open hole percussion and aircore, however these holes were not used in any manner to support the Mineral Resource estimate.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• RC drilling generally used high air pressure to keep the lateritic samples dry and to maintain good sample recovery. Recovery in the mineralised intervals was recorded as being good to excellent. • Details regarding sample recovery in AC is unknown. • Relationships between sample recovery and grade could not be determined without original sample weight data, however the CP does not believe a material relationship exists.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• Metallica Minerals geological logging protocols at the time were followed to ensure consistency in drill logs between the geological staff. • Chips were logged for weathering, lithologies (primary and proto), mineralogy, colour and grainsize. Chip trays (with chips) were photographed. • The main logged materials were Hm (hematite rich soil), Lfe (ferruginous laterite), Lsi (ferruginous laterite with silica boxwork), Lsap (saprolite), Wum (weathered ultramafic), and Ser (serpentinite – fresh). • The full sample lengths were logged.

Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• RC and AC samples were dispatched to the analytical laboratory in Townsville. • SGS and ALS laboratories were used by Metallica Minerals during this time. • The CP considers the spear sampling method to be acceptable, based upon quality assurance testwork with samples which were riffle split. • Samples were dry. • Sample sizes are considered to be appropriate to the grain size of the material being sampled. • Field duplicates from RC samples were taken at a rate approximately one sample per drillhole. Field duplicates were taken by spear method by the same sampler who took the original spear sample. No records were kept regarding the sample weights for either the original or duplicate samples.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • 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.	• Drill samples were sent to SGS or ALS laboratories in Townsville. Both laboratories conform to Australian Standards ISO9001 and ISO 17025. • ALS samples were dried then pulverised in LM5 Mill to achieve a nominal 85% passing 75 µm. A pulp sample was then taken and split down to achieve a 0.5 g sample which was digested in a mixture of four acids (nitric, perchloric hydrochloric and hydrofluoric) and the solution's elemental concentrations determined by ICP-AES. Internal standards were used for quality assurance purposes. • SGS samples followed a similar subsampling process. The pulp sample is digested in four-acid to effect as near to total solubility of the metals as possible, with the solution presented to an ICP for element quantification. • The processes are considered total. • Quality assurance of the sampling was carried out by submitting quality control samples including a duplicate sample collected at the rig using a riffle splitter. The samples were analyzed after the assays for both samples were returned and show good correlation. The Competent Person is satisfied that the sampling system is up to industry standard. • Field duplicates from RC samples were taken at a rate of approximately 1 sample per drill hole. Field duplicates were taken by passing the bulk sample through another riffle splitter at the rig. • No records were kept regarding the sample sizes for either the original or duplicate samples. • The quality assurance procedures and results show acceptable levels of accuracy and precision were established.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Australian Mines geological personnel independently reviewed selected RC drill intersections and verified their suitability to be included in the drilling database. • The mineralisation is not visual, and any significant intersections are apparent from the sample analyses. • Assay data recorded as negative values in the database were 'less than detection' and adjusted to very low-grade values.

Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• All drillholes were surveyed by independent surveying companies, using differential GPS (DGPS) to provide accurate surveyed coordinates. Downhole surveys were not required due to the shallow depths of most holes. • All grid coordinates are in MGA coordinates, with the grid being MGA Zone 55 South. • The topographic DTM was prepared using data sourced from photogrammetry by Quasco Surveys Pty Ltd, flown in 2006. • Selected RC drill hole collars were surveyed in the field with a hand-held GPS unit, and the surveyed coordinates (easting and northing) were within 10 m of the coordinates surveyed by DGPS. • The GPS locations are considered to be an approximate location of the actual collar coordinates.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Drill spacing was set to approximately 50 m x 50 m in Indicated areas. Drill spacing within the Inferred areas were up to 100 m x 100 m. • Samples were not composited at the sampling stage.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• Drill holes were drilled vertically which is considered to minimize any potential sampling bias with the saprolitic host lithology. Some late stage faulting may be present, but any offset of saprolite and / or mineralisation cannot be predicted at the Mineral Resource drill-out level. • Any sampling bias resultant from the orientation of drilling and possible structural offsets of mineralisation is considered to be minimal.
Sample security	• The measures taken to ensure sample security.	• Drill samples were under the care and supervision of Metallica Minerals staff at all times until transportation by local couriers to the analytical laboratories in Townsville. Australian Mines have continued the secure holdings of chip trays and drill core.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• The drilling procedures, sampling methodologies, sample analyses and the drill hole database were audited by previous geological consultants prior a Mineral Resource estimate created in 2008. The same group reviewed sampling techniques at the time and adequately documented their findings for the benefit of the current Mineral Resource estimate.

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	• *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.*	• The Minnamoolka Mineral Resource is covered by mining lease ML20549. This lease is 100% owned by Sconi Mining Operations Pty Ltd, 100% owned by Australian Mines, and has an area of 654.3Ha. The mining lease was granted on 01/01/2014 and expires on 30/04/2034. EPM25833 surrounds the mining lease and was granted on 20 August 2015 for a period of five years.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Minnamoolka deposit has been subjected to several drilling and sampling programs since the deposit was first identified. • The first phase of exploration was carried out by Austin Anderson for A.O. Australia Pty Ltd between 1969 and 1976. During this period airborne magnetics were completed which identified 5 strong magnetic anomalies, with Area A becoming the Minnamoolka deposit. Soil and ground magnetic surveys were followed up with trenching and drilling campaigns. Due to the drilling and assaying techniques, lack of adequate QAQC protocols, and poor understanding of the survey control, none of these holes were used to support this Mineral Resource estimate. • Metallica Minerals completed several drilling campaigns between 1997 and 2007. RC, AC and diamond drilling (DD) were carried out during these times. Drilling carried out by Metallica Minerals has been used to support the current Mineral Resource estimate.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Minnamoolka Mineral Resource is contained within a saprolite, developed by weathering process over fragments of ultramafic basement rocks. Ni and Co have been enriched from the ultramafic rocks by both residual and supergene processes. • The deposit is bounded to the West by granite, and rare pegmatites have been intersected by the drilling. • The saprolite mineralisation varies in thickness from approximately 1m to in excess of 35m, and generally starts from surface forming a blanket over the topography.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the*
		• Exploration Results are not being reported.
		• All drill results from 1997 to 2007 are used to inform the Mineral Resource estimate, which reflects the thickness and tenor of mineralisation as reported from drill results.

	understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *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.*	• Exploration Results are not being reported.
Relationship between mineralisation widths and intercept lengths	• *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').*	• The Ni mineralisation is hosted in limonitic and saprolitic profiles which are relatively thin and laterally extensive. They present a vertical grade profile as a result of the weathering processes that reduce with depth. Vertical RC drilling completed to date provides the best drilling orientation.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Exploration Results are not being reported.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Exploration Results are not being reported.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No other substantive results are reported.
Further work	• *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.*	• Australian Mines have not planned further exploration test work in the near term.

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	• *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.*	• The drill hole database was audited prior to the 2008 Mineral Resource estimate by the Competent Person at the time, and any issues were resolved prior to proceeding. This included both manual verification of selected drilling holes against hard copy assay certificates, and full comparison of digital data against laboratory digital files. The current Competent Person has reviewed Mineral Resource estimate reports attesting to this and is satisfied that the reviews were carried out competently, and that the drill hole database (for holes drilled from 1997) is fit for use to support the current Mineral Resource estimate. • CSA Global checked the drillhole files for errors prior to Mineral Resource estimation, including for absent collar data, multiple collar entries, absent survey data, overlapping intervals, negative sample lengths, and sample intervals which extended beyond the hole depth defined in the collar table. No errors of any material significance were detected. • The following elemental data were imported into Datamine from the database: Ni, Co, Sc, Fe, Mg, Mn, Cr, Ca and Al. Stoichiometric calculations were used to convert Fe to FeO, Mg to MgO, Mn to MnO, Ca to CaO, Al to Al2O3, and Cr to Cr2O3, with the oxides used in grade interpolation.
Site visits	• *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.*	• The Competent Person has not visited the Minnamoolka site, but has visited other SCONI project sites (Kokomo, Greenvale and Lucknow) in October 2017. Drill holes at Minnamoolka were drilled during the same period as holes at these other projects, which the Competent Person inspected. The site inspection carried out in 2017 is considered a proxy for Minnamoolka due to the same company ownership, same drilling contractors and geological field staff, and similar geological setting. • The Competent Person intends to visit the project at a near future date when Australian Mines carry out further test work at the project. • The outcome of the 2017 site visit (Kokomo, Greenvale and Lucknow) was that data has been collected in a manner that supports reporting a Mineral Resource estimate in accordance with the guidelines of the JORC Code, and controls on the mineralisation are relatively well-understood. The project location, infrastructure and local environment were appraised as part of JORC's "reasonable prospects" test.
Geological interpretation	• *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*	• The nickel laterite geology is well understood and the data at the deposit conforms to the expected laterite sequence. The laterite profile is developed from weathering processes with significant lateral continuity in the profile. This can have local variation in thickness and grade as a result of weathering processes. This is expected for laterite deposits where mining is

	estimation. • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	expected to adapt to the local changes. The Mineral Resource classification is based on drill spacing and it is anticipated that future infill drill programs will reduce volume uncertainty. • The Competent Person's confidence in the geological interpretations is reflected by the classification of the Mineral Resource. • Geological logs of drill samples and sample assays were used to interpret the geological models. • Alternative models for the saprolitic and lateritic profiles might be proposed with future work programs; however, it is not anticipated that these will impart any material differences to the tonnage or interpolated grade distribution of resultant models. • The geological interpretation of the weathering profiles controls the interpretation of the mineralisation envelopes for nickel and cobalt. • The geological models were interpreted and modelled by the Competent Person. Three lithological domains were interpreted based upon the geological logs of drill samples and/or assay grades; a limonite profile exhibiting elevated iron and suppressed magnesium content, a lower saprolite zone with suppressed iron and elevated magnesium content, and a weathered ultramafic bedrock zone • An interpretation of the nickel distribution resulted in the delineation of domains constraining >0.2% nickel. • An interpretation of the cobalt distribution resulted in the delineation of domains constraining >0.02% cobalt.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Minnamoolka Mineral Resource is approximately 1,200 m in strike length, between 500 m and 1,200 m in plan width, and extends to a depth of approximately 50 m below surface.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The 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.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• Datamine Studio RM was used for the geological modelling, block model construction, and grade interpolation and validation. • A block model with block sizes 20 m (X) x 20 m (Y) x 2 m (Z) was constructed. Sub-celling was used with the parent cell dimensions divisible by 16. The block sizes are approximately half the tightest drill spacing, which generally supports an Indicated resource classification. Blocks were flagged according to the geological and mineralisation envelopes. • Drill sample data were flagged by the mineralisation and weathering domain envelopes, with variables LTHZONE, NIZONE and COZONE used. Drillholes were sampled at 1 m intervals and the drill samples were accordingly composited to 1 m lengths. Composited sample data were statistically reviewed to determine appropriate top-cuts. Histograms and Log probability plots were used to determine the top-cuts, and the very high-grade samples were reviewed in Datamine by the Competent Person to determine if they were clustered with other high-grade samples.

	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	• The composited drill samples were input into variogram modelling. Normal scores variograms were selected for variogram modelling as they presented the best structured variograms for the assays. Downhole and directional variograms were modelled for nickel, cobalt, scandium, iron, magnesium, manganese, aluminium, chromium and calcium. In general low relative nugget effects were modelled with short range structures typically in the order of 30–40 m associated with sills between 55% and 75% of the population variance. Major variogram directions were typically aligned sub-parallel to the strike of the host geological units. • Grades were interpolated for all available grade variables by Ordinary Kriging (OK), with local dip variations honoured by using Datamine Studio's Dynamic Anisotropy (DA) functionality. Blocks were estimated using a first pass search ellipse equivalent to the full range of the modelled variogram for each variable and estimation domain combination defined. A minimum of 6 and maximum of 12 samples from a minimum of two drillholes per model cell sample selection strategy was employed. Search radii were subsequently increased by a factor of x 2 and x 4 if cells were not interpolated in the first pass. Cell discretization of 3 x 3 x 2 (X, Y, Z) was employed. The nickel and cobalt mineralisation domains were used as a hard boundary during grade interpolation. • The Mineral Resource model was an update of the 2008 Mineral Resource, with the geological interpretations updated following a review of the statistical populations of nickel and cobalt by the Competent Person. A new metal equivalent formula has been applied for the reporting of this MRE, which is the same formula used for reporting the Lucknow, Greenvale, Kokomo and Bell Creek Mineral Resources in February 2019. • No by-products are anticipated to be recovered. • The interpolated grades were validated by way of visual review of cross sections (block model and drill samples presented with same colour legend), swath plots, and comparison of estimation domain mean grades with de-clustered distribution data.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are estimated on a dry basis. Moisture content measurements were derived from the difference between the dry and wet weights of the RC drill samples, as determined by SGS Laboratory in Townsville, Queensland.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A cut-off grade of 0.45% Ni was used to report the Mineral resource. This cut-off grade was derived from a Scoping Study carried out by Metallica.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as 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*	• No mining factors have been applied to the resource block model prior to handover for mining studies. Any mining will be by open pit mining methodologies.

	explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	• *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.*	• Metal recovery data as determined by variability testwork of nickel and cobalt leach extraction. Results typically achieved between 90% and 99% from samples with nickel and cobalt grades aligned with expected mine grades. Lower recoveries of between 85% and 90% were achieved from some lower-grade samples.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Mining of the lateritic and saprolitic ore is proposed to be from relatively shallow open pits. The lithologies are highly weathered with most sulphides species already oxidised. • Disposal of mine tailings and mining waste can possibly be into pre-existing mine voids. • It is anticipated that any future environmental impacts and waste disposal from mining and processing will again be correctly managed as required under the regulatory permitting conditions.
Bulk density	• *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.*	• Dry bulk density (DBD) was measured using several methods, using several types of test material, to provide a basis for deriving the density data used in the Mineral Resource. The methods included calliper (direct measurement of volume of whole PQ diameter diamond core); sand box core (indirect measurement of volume by placing incompetent core samples in a sand box of known volume, then removing the core and replacing with the required volume of sand); and surface pits (shallow pits with volumes calculated by volume of sand required to fill the pit; the excavated material is weighed). • DBD data was obtained to reach the required confidence for the main geological material types of iron laterite, haematitic (red) laterite, mottled laterite, saprolite, silica boxwork and weather ultramafic. Broader-based lithological domains were then identified and earmarked for potential economic extraction which in turn incorporated the different characteristics of these material types in terms of mineralogy, void spaces, alteration zones and moisture content. • The average density for the significant weathering codes (sample lithological logs) were derived from calliper, sand pits and surface pits. The DBD was assigned to the block model on a per weathering unit basis. • The following assignments were carried out for the Minnamoolka Mineral Resource (DBD in t/m^3): Lfe (DBD=1.45); Lsap/Lsi (1.7); Wum (1.9).
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• The Mineral Resource has been classified following due consideration of all criteria contained in Section 1, Section 2 and Section 3 of JORC 2012 Table 1.

	• *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).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Data quality and confidence in the geological interpretation support the classification. Wireframe solids for Measured and Indicated volumes were used to assign classification values (RESCAT; 1 = Measured, 2 = Indicated, 3 = Inferred, 4 = unclassified). • The Indicated Mineral Resource is supported by a reasonably regular drill pattern spacing of 50 m (EW) x 50 m (NS). • The Inferred Mineral Resource is supported by a drill pattern spacing of greater than 50 m (EW) x 50 m (NS) and constrained within the Ni and Co grade shells. • Blocks outside either the nickel or cobalt domains are not classified. • The final classification strategy and results appropriately reflect the Competent Person's view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resource models were internally peer reviewed by CSA Global prior to release of results to Australian Mines. CSA Global reviewed the data collection, QAQC, geological modelling, statistical analyses, grade interpolation, bulk density measurements and resource classification strategies.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *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.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• No detailed studies have been completed using simulation or probabilistic methods that could quantify relative accuracy of the resource estimates. • Laterites can have significant short-range variation in material types and grade due to local variations in weathering processes. However, on a broader scale they demonstrate consistency in lateral extent. As a result, drilling demonstrates a regional grade and volume rather than local certainty. Hence drill spacing, as used for the Mineral Resource classification, is the prime indicator of estimation risk, therefore used to delineate Mineral Resource classification volumes.