

24 July 2017

# EM SURVEYS CONTINUE TO DELIVER MASSIVE SULPHIDE TARGETS AT MT ALEXANDER

#### **HIGHLIGHTS:**

- Large conductor Anomaly 11 identified by moving loop electromagnetic (MLEM) survey over the east-northeast structural corridor parallel to and 1km south of the Cathedrals Belt
- Anomaly 11 is modelled with conductivity of 4,700 Siemens and an area of 113m x 91m
- Deep search SAMSON EM survey is planned for the area around the intersection of the Cathedrals Belt and the Ida Fault
- New EM targets are being prioritised for drill testing

#### **NEW EM TARGETS AT MT ALEXANDER**

St George Mining Limited (ASX: **SGQ**) ('St George Mining' or 'the Company') is pleased to provide an update regarding regional EM surveys at the Mt Alexander Project.

A MLEM survey has been completed over the east-northeast corridor that is parallel to and 1km south of the Cathedrals Belt. A strong EM anomaly – Anomaly 11 – was detected 450m south of the intersection of this corridor with the northern extension of the Mt Alexander greenstone belt; see Figure 1.

This east-northeast feature was first recognised in the high resolution magnetic data generated by the airborne magnetic survey completed by St George at the Mt Alexander Project and may represent a primary transform fault that could host mineralised komatilitic ultramafics, similar to the Cathedrals Belt.

The MLEM survey was completed using transmitter loops of 200m x 200m and with line spacing of 200m.

A new anomaly - Anomaly 11 - was identified as a bedrock EM conductor with conductivity of 4,700 Siemens. The EM plate for Anomaly 11 is modelled with dimensions of  $113m \times 91m$  and at a depth of 98m below surface. Drill testing of this target has been prioritised for the next drill programme at Mt Alexander.

The new high resolution magnetic data has also identified the location of the Ida Fault within the Mt Alexander tenements. The intersection of the Cathedrals Belt and Ida Fault may be an important geological location that could have acted as a first order regional control on mineralisation within the Mt Alexander tenements.

A high powered SAMSON EM survey will be completed over the western extension of the Cathedrals Belt including the area where these structures intersect, to search for any deep conductors that may represent massive sulphide accumulations. The SAMSON EM survey will use fixed transmitter loops of 1000m x 1000m with 100m line spacing and 50m or 100m station spacing.

Figure 1 illustrates the area to be surveyed, which is west of the Investigators Prospect.



Drilling in the Cathedrals Belt has shown that nickel-copper sulphides may occur at increasing depths towards the west, with most intersections of high grade mineralisation at Investigators being at 100m to 150m below surface. The SAMSON EM survey is designed to search for targets up to 500m below surface.

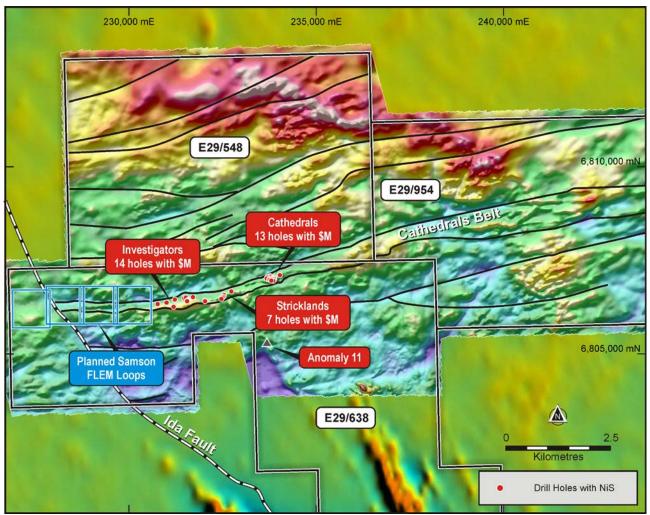


Figure 1 – a map of the Cathedrals Belt (against high resolution Total Magnetic Intensity) showing the location of Anomaly 11 and the SAMSON EM loops planned for the area around the Ida Fault.

Intersections of massive nickel-copper-cobalt-PGE sulphides ("\$M") at the Investigators, Stricklands and Cathedrals Prospects are also highlighted.

#### St George Mining Executive Chairman, John Prineas said:

"Geophysics has been an excellent exploration tool at Mt Alexander with EM surveys identifying numerous conductors in the Cathedrals Belt that have been drilled and confirmed as nickel-copper sulphide mineralisation.

"We are continuing to use reconnaissance geophysics in unexplored areas of the Mt Alexander Project, and early results are encouraging.

"It is pleasing to see that as we advance prospects in the Cathedrals Belt, we also have very attractive exploration targets within the broader project area."



#### **ANOMALY 11**

The EM response for Anomaly 11 was recorded on two lines of the MLEM survey, spaced 200m apart. Figures 2 and 3 illustrate the EM response for these two lines – line 233600E and line 233800E. The EM responses were seen in the very late time channels 30 to 39.

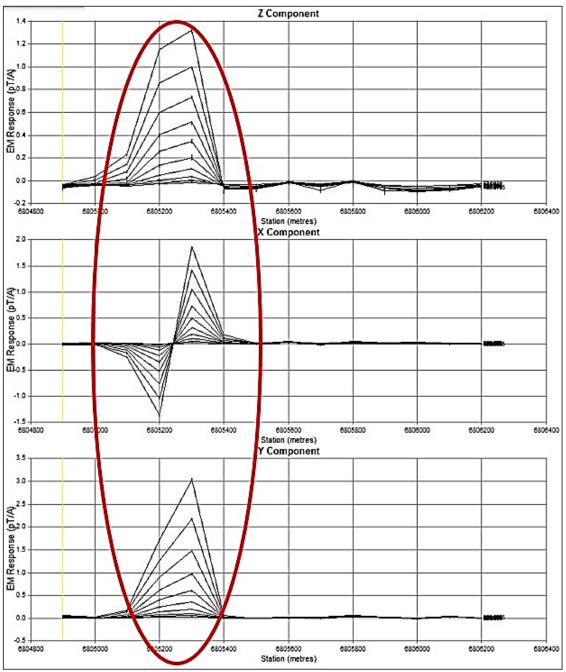


Figure 2 – the strong EM response for Anomaly 11 on line 233600E as shown by linear profile data in the very late time channels 30-39.



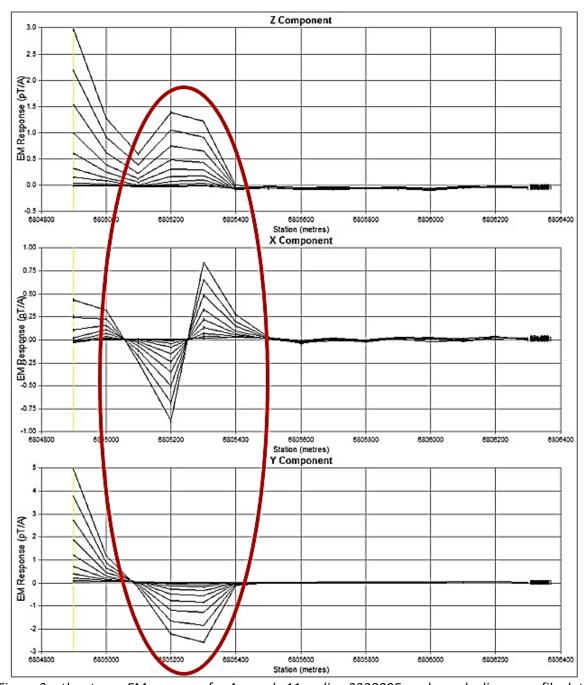


Figure 3 – the strong EM response for Anomaly 11 on line 233800E as shown by linear profile data in the very late time channels 30-39.

#### THE IDA FAULT

The Ida Fault is a significant Craton-scale structure that marks the boundary between the Eastern Goldfields Superterrane to the east and the Youanmi Terrane to the west.

The new high resolution magnetic data has clearly identified the location of the Ida Fault within the Mt Alexander tenements, and has placed the Fault approximately 1km further west from where it was previously interpreted.

Figure 4 shows the high resolution magnetic data (First Vertical Derivative) for the Cathedrals Belt, and illustrates the Ida Fault as well as other interpreted structures in the project area.



The new SAMSON EM survey will test the area around the intersection of the Cathedrals Belt and the Ida Fault. The survey is scheduled for late August 2017.

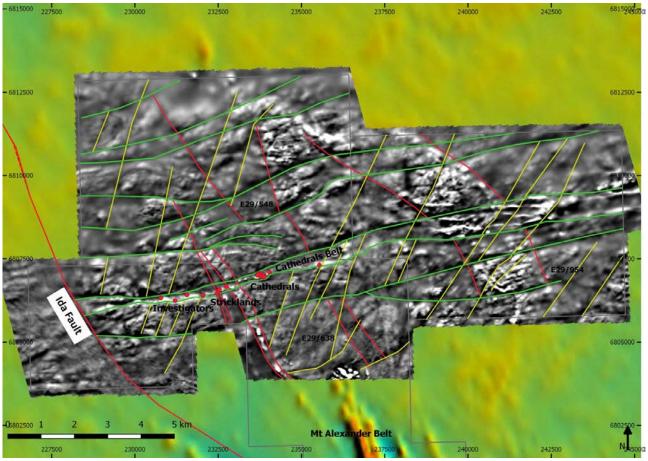


Figure 4 – new high resolution magnetic data (Total Magnetic Intensity 1VD) for the Cathedrals Belt and surrounding area. The position of the Ida Fault, approximately 3km west of the Investigators Prospect, is shown.

#### **ABOUT THE MT ALEXANDER PROJECT**

The Mt Alexander Project is located 120km south-southwest of the Agnew-Wiluna belt which hosts numerous world class nickel deposits. The Project comprises four granted exploration licences – E29/638, E29/548, E29/962 and E29/954.

The Cathedrals, Stricklands and Investigators nickel-copper-cobalt-PGE discoveries are located on E29/638, which is held in joint venture by Western Areas Limited (25%) and St George (75%). St George is the Manager of the Project with Western Areas retaining a 25% non-contributing interest in the Project (in regard to E29/638 only) until there is a decision to mine.



#### For further information, please contact:

John Prineas
Executive Chairman
St George Mining Limited
(+61) 411 421 253
John.prineas@stgm.com.au

#### **Competent Person Statement:**

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Matthew McCarthy, a Competent Person who is a Member of The Australian Institute of Geoscientists. Mr McCarthy is employed by St George Mining Limited.

Mr McCarthy has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McCarthy consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

# The following sections are provided for compliance with requirements for the reporting of exploration results under the JORC Code, 2012 Edition.

# **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.	The sections of the core that are selected for assaying are marked up and then recorded on a sample sheet for cutting and sampling at the certified assay laboratory. Samples of HQ or NQ2 core are cut just to the right of the orientation line where available using a diamond core saw, with half core sampled lengthways for assay.
		The MLEM survey was conducted using 200x200m loops to generate 100 amps, with a base frequency of 0.5Hz. Line spacing was typically 200m and station spacing typically 100m. Survey was using a fluxgate sensor.
		The SAMSON EM survey will be conducted using GAP Geophysics geopack high-powered HPTX-70 or HPTX-80 transmitter using 1000x1000m survey loops of 35mm wire to generate 150 amps with a transmit frequency of 1Hz. Two receiver systems will be used, being TM-7 magnetometers sampling at 2400Hz.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Wherever possible the same side of the drill core is sampled to ensure sample is representative. Appropriate QAQC samples are inserted into the sequences as per industry best practice.
	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.	Diamond core (both HQ and NQ2) is half-core sampled to geological boundaries no more than 1.5m and no less than 10cm. Samples less than 3kg are crushed to 10mm, dried and then pulverised to 75 $\mu$ m. Samples greater than 3kg are first crushed to 10mm then finely crushed to 3mm and input into the rotary splitters to produce a consistent output weight for pulverisation.
		Pulverisation produces a 40g charge for fire assay. Elements determined from fire assay are gold (Au), platinum (Pt) and palladium (Pd) with a 1ppb detection limit. To determine other PGE concentrations (Rh, Ru, Os, Ir) a 25g charge for nickel sulphide collect fire assay is used with a 1ppb detection limit.
		Other elements will be analysed using an acid digest and an ICP finish. These elements are: Ag, Al, As, Bi, Ca, Cd, Co, Cr, Fe, K, Li, Mg, Mn, Mo, Nb, Ni, P, Pb, S, Sb, Sn, Te, Ti, V, W, Zn. The sample is digested with nitric, hydrochloric, hydrofluoric and perchloric acids to effect as near to total solubility of the sample as possible. The sample is then analysed using ICP-AES or ICP-MS.
		LOI (Loss on Ignition) will be completed on selected samples to determine the percentage of volatiles released during heating of samples to 1000°C.
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).	Diamond drilling is completed using HQ sized coring equipment through the weathered zone (mostly saprock) with 3m barrels, and then HQ or NQ2 in fresh rock with 3m or 6m barrels as required. The core is oriented using ACT II electric core orientation.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond core recoveries are recorded during drilling and reconciled during the core processing and geological logging. The core length recovered is measured for each run and recorded which is used to calculate core recovery as a percentage.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Measures taken to maximise core recovery include using appropriate core diameter and shorter barrel length through the weathered zone, which at Cathedrals and Investigators is mostly <25m and Stricklands <45m depth. Primary locations for core loss in fresh rock are on geological contacts and structural zones, and drill techniques are adjusted accordingly, and if possible these zones are predicted from the geological modelling.
	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.	No sample recovery issues have yet been identified that would impact on potential sample bias in the competent fresh rocks that host the mineralised sulphide intervals.
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.	Geological logging is completed for all drill holes with lithology, alteration, mineralisation, structure and veining recorded. The logging is recorded digitally and imported in the St George Mining central database.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is both qualitative and quantitative depending on the field being captured. Core is photographed with one tray per photo and stored digitally.
	The total length and percentage of the relevant intersections logged.	All drill holes are geologically logged in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	The HQ and NQ2 core is cut in half length ways just to the right of the orientation line where available using a diamond core saw. All samples are collected from the same side of the core where practicable.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	No full non-core holes were completed in the recent drill program, however four drill holes utilised RC precollars where samples are riffle-split and to date have been dry.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The entire sample is pulverised to 75µm using LM5 pulverising mills. Samples are dried, crushed and pulverized to produce a homogenous representative sub-sample for analysis. A grind quality target of 90% passing 75µm is used.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	Quality control procedures include submission of Certified Reference Materials (standards), duplicates and blanks with each sample batch. QAQC results are routinely reviewed to identify and resolve any issues.
	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.	Duplicate samples are selected during sampling. Samples comprise two quarter core samples.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered to be appropriate for base metal sulphide mineralisation and associated geology.

Criteria	JORC Code explanation	Commentary
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.	Diamond core samples are analysed for Au, Pt and Pd using a 40g lead collection fire assay; for Rh, Ru, Os, Ir using a 25g nickel sulphide collection fire assay; and for Ag, Al, As, Bi, Ca, Cd, Co, Cr, Fe, K, Li, Mg, Mn, Mo, Nb, Ni, P, Pb, S, Sb, Sn, Te, Ti, V, W, Zn using a four acid digest and ICP-AES or MS finish. The assay method and detection limits are appropriate for analysis of the elements required.
	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.	A handheld XRF instrument (Olympus Innov-X Spectrum Analyser) is used to systematically analyse the drill core onsite. One reading is taken per meter, however for any samples with matrix or massive sulphide mineralisation then five to ten samples are taken at set intervals per meter. The instruments are serviced and calibrated at least once a year. Field calibration of the XRF instrument using standards is periodically performed.
		The handheld XRF results are only used for preliminary assessment and reporting of element compositions, prior to the receipt of assay results from the certified laboratory.
		The MLEM survey was conducted using 200x200m loops to generate 100 amps, with a base frequency of 0.5Hz. Line spacing was typically 200m and station spacing typically 100m. Survey was using a fluxgate sensor.
		The SAMSON EM survey will be conducted using GAP Geophysics geopack high-powered HPTX-70 or HPTX-80 transmitter using 1000x1000m survey loops of 35mm wire to generate 150 amps with a transmit frequency of 1Hz. Two receiver systems will be used, being TM-7 magnetometers sampling at 2400Hz.
	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.	Laboratory QAQC involves the use of internal lab standards using certified reference material (CRMs), blanks and pulp duplicates as part of in house procedures. The Company also submits a suite of CRMs, blanks and selects appropriate samples for duplicates.  Sample preparation checks for fineness are performed by the laboratory to ensure the grind size of 90% passing 75µm is being attained.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are verified by the Exploration Manager of St George Mining.
	The use of twinned holes.	No twin holes were drilled in the recent drill program.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data is captured onto a laptop using acQuire software and includes geological logging, sample data and QA/QC information. This data, together with the assay data, is entered into the St George Mining central SQL database which is managed by external consultants.
	Discuss any adjustment to assay data.	No adjustments or calibrations will be made to any primary assay data reported.
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.	Drill holes have been located and pegged using a DGPS system with an expected accuracy of +/-0.05mmm for easting, northing and elevation.
	useu iii iviiriei ui nesuui te estimution.	Downhole surveys are conducted using a single shot camera approximately every 30m during drilling to record and monitor deviations of the hole from the planned dip and azimuth. Post-drilling downhole gyroscopic surveys have been conducted, which provide much more accurate survey results.

Criteria	JORC Code explanation	Commentary
	Specification of the grid system used.	The grid system used at the Mt Alexander project is GDA94 (MGA), zone 51.
	Quality and adequacy of topographic control.	Elevation data has been acquired using DGPS surveying at individual collar locations and entered into the central database. A topographic surface has been created using this elevation data.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	The diamond drill program is testing modelled EM conductors and geological criteria for massive nickel-copper-PGE sulphide mineralisation. The spacing and distribution of the drill holes is appropriate to test the defined targets.
		The SAMSON EM survey will be conducted on 100m line spacing with 50m and 100m stations to provide a high-resolution dataset. Infill 50m spaced lines and 50m and 25m stations may be conducted where further resolution of EM anomalies is required.
	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.	The completed drilling at Cathedrals, Stricklands and Investigators is not sufficient to establish the degree of geological and grade continuity to support the definition of Mineral Resource and Reserves and the classifications applied under the 2012 JORC code.
	Whether sample compositing has been applied.	No compositing has been applied to the exploration results.
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.	Drill holes were planned as perpendicular as possible to the target EM plates to approximate true width. Most of the ultramafic units in the Cathedrals Belt dip shallow to the north and where possible drill holes are planned to intersect perpendicular to dip. The orientation of key structures may be locally variable.
	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.	No orientation based sampling bias has been identified in the data to date.
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by St George Mining. Core samples are stored in the secure facilities at Bureau Veritas laboratory in Perth. Transportation of core is managed by St George contractors and Bureau Veritas and actively track monitored.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been conducted at this stage.

# **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral Tenement and Land Status	Type, name/reference number, location and ownership including agreements or material issues with third parties including joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Mt Alexander Project is comprised of four granted Exploration Licences (E29/638, E29/548, E29/954 and E29/962). Tenement E29/638 is held in Joint Venture between St George (75% interest) and Western Areas (25% interest). E29/638 and E29/548 are also subject to a royalty in favour of a third party that is outlined in the ASX Release dated 17 December 2015 (as regards E29/638) and the ASX release dated 18 September 2015 (as regards E29/548).
	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.	No environmentally sensitive sites have been identified on the tenements. A registered Heritage site known as Willsmore 1 (DAA identification 3087) straddles tenements E29/548 and E29/638. All four tenements are in good standing and no known impediments exist.

Criteria	JORC Code explanation	Commentary
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	Exploration on tenements E29/638 and E29/962 has been largely for komatiite-hosted nickel sulphides in the Mt Alexander Greenstone Belt. Exploration in the northern section of E29/638 (Cathedrals Prospect) and also limited exploration on E29/548 has been for komatiite-hosted Ni-Cu sulphides in granite terrane. No previous exploration has been identified on E29/954.
		The target lithological unit in the Mt Alexander Greenstone belt has historically been the Central Ultramafic Unit, which has been explored by a number of parties, most recently by Nickel West.
		High grade nickel-copper sulphides were discovered at the Mt Alexander Project in 2008. Drilling was completed to test co-incident electromagnetic (EM) and magnetic anomalies associated with nickel-PGE enriched gossans in the northern section of current tenement E29/638. The drilling identified high grade nickel-copper mineralisation in granite-hosted ultramafic units and the discovery was named the Cathedrals Prospect. The tenements remain underexplored.
Geology	Deposit type, geological setting and style of mineralisation	The Mt Alexander Project is at the northern end of a western bifurcation of the Mt Ida Greenstones. The greenstones are bound to the west by the Ida Fault, a significant Craton-scale structure that marks the boundary between the Kalgoorlie Terrane (and Eastern Goldfields Superterrane) to the east and the Youanmi Terrane to the west.
		The Mt Alexander Project is prospective for further high-grade komatiite-hosted nickel-copper-PGE mineralisation (both greenstone and granite hosted) and also precious metal mineralisation (i.e. orogenic gold) that is typified elsewhere in the Yilgarn Craton.
Drill hole information	A summary of all information material to the understanding of the exploration results including 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 meters) of the drill hole collar • Dip and azimuth of the hole • Down hole length and interception depth • Hole length	Relevant drill hole information is shown in Figure 1 and Figure 4 in the body of the release.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	Reported assay intersections are length and density weighted. Significant intersections are determined using both qualitative (i.e. geological logging) and quantitative (i.e. lower cut-off) methods.  For massive sulphide intersections, the nominal lower cut-off is 2% for either nickel or copper. For disseminated, blebby and matrix sulphide intersections the nominal lower cut-off for nickel is 0.3%.
	Where aggregated 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.	Any high-grade sulphide intervals internal to broader zones of sulphide mineralisation are reported as <i>included</i> intervals.  Any heavy disseminated or matrix sulphides with >1% nickel or copper on contact with massive sulphide mineralisation are grouped with the massive sulphides for calculating significant intersections and the massive sulphide mineralisation is reported as an <i>including</i> intersection.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have yet been used for reporting exploration results.

Criteria	JORC Code explanation	Commentary
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 (e.g. down hole length, true width not known).	Assay intersections are reported as down hole lengths. Drill holes were planned as perpendicular as possible to intersect the target EM plates so downhole lengths are interpreted to be near true width. Results from recent drill programs are being reviewed further to confirm the relationship between downhole lengths and true widths.
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 plane view of drill hole collar locations and appropriate sectional views.	Relevant plan maps of the Cathedrals Belt are shown in the body of the release.
Balanced Reporting	Where comprehensive reporting of all Exploration Results is not practical, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting Exploration Results.	The exploration results reported are representative of the mineralisation style with grades and/or widths reported in a consistent manner.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observation; 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.	All material or meaningful data collected has been reported.
Further Work	The nature and scale of planned further work (e.g. 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.	Further exploration includes ongoing assessment of the results of the recent diamond drill program, and further surface EM surveys as discussed in the body of the release.