PETROLOGY CONFIRMS NICKEL, COBALT AND COPPER SULPHIDES AT THE PHU LON PROSPECT, LAOS

Key Highlights:

- Petrology analysis of mineralisation from the Phu Lon Prospect confirms nickel sulphide mineralisation;
- Copper sulphide and cobalt sulphide mineralisation was also recorded, supporting Santana's technical analysis of Phu Lon being a magmatic sulphide mineralised ultramafic intrusion with similar geological characteristics to the Jinchuan Deposit in China (which hosts 500mt @ 1.2% Ni, 0.7% Cu, 0.4g.t platinum group elements);
- Phu Lon has a significant mineralisation footprint confirmed along a 14km strike length;
- Previous trenching results from Phu Lon include:
  - 975m @ 0.51% Ni (Including 42m @ 1.02% Ni)
  - 90m @ 0.67% Ni (including 36m 1.01% Ni)
  - 80m @ 0.74% Ni (including 17m @0.91% Ni);
- Significant geophysical anomalies coincident to the trench results highlight the potential for sulphide mineralisation at depth; and
- A maiden drilling program at Phu Lon is scheduled to commence in January 2020, initially comprising 13 holes for circa 2,000m of diamond drilling with first assays expected in February 2020.

25 November 2019. Santana Minerals Limited ('Santana' or 'the Company') is pleased to announce results of petrology work completed on samples from Mekong Minerals Limited's ('Mekong') Phu Lon Nickel Prospect, located within the Sayabouly Project in Laos. Santana is acquiring the Mekong assets which includes the Sayabouly Project, as first announced in Santana's ASX announcement of 17th July 2019 and recently approved by both Santana and Mekong shareholders at General Meetings of each company on 15th November 2019.

The interpretation of the Phu Lon Nickel Prospect is modelled on the world class Jinchuan Deposit in China (500mt @ 1.2% Ni, 0.7% Cu, 0.4g.t platinum group elements), a magmatic sulphide style of mineralisation.

To strengthen this interpretation, rock-chip samples from trench excavations were sent for petrological and Scanning Electron Microscope (SEM) analysis at the University of New South Wales. Fifteen samples were submitted for petrology to confirm the composition of the ultramafic intrusion, with six of these chosen for SEM analysis to determine the nature of the nickel mineralisation. These samples were taken from previously reported significant results from trench 4 and 6 (shown in Figure 1), which sit within a 14km x 1km mineralised envelope.

This analysis confirmed the presence of pentlandite and cobalt pentlandite, nickel and cobalt-nickel sulphide minerals respectively, which are ordinarily amenable to metallurgical extraction of the contained nickel-cobalt metals.

Three of the six SEM analysed samples recorded pentlandite (a nickel sulphide) with one of these three also defining cobalt pentlandite (cobalt-nickel sulphide). These minerals were found disseminated within the ultramafic host. Nickel oxides were also noted in a number of these samples, as well as alloys of nickel and iron (awaruite). A separate sample contained chalcopyrite, a copper sulphide mineral that previously had not been identified.

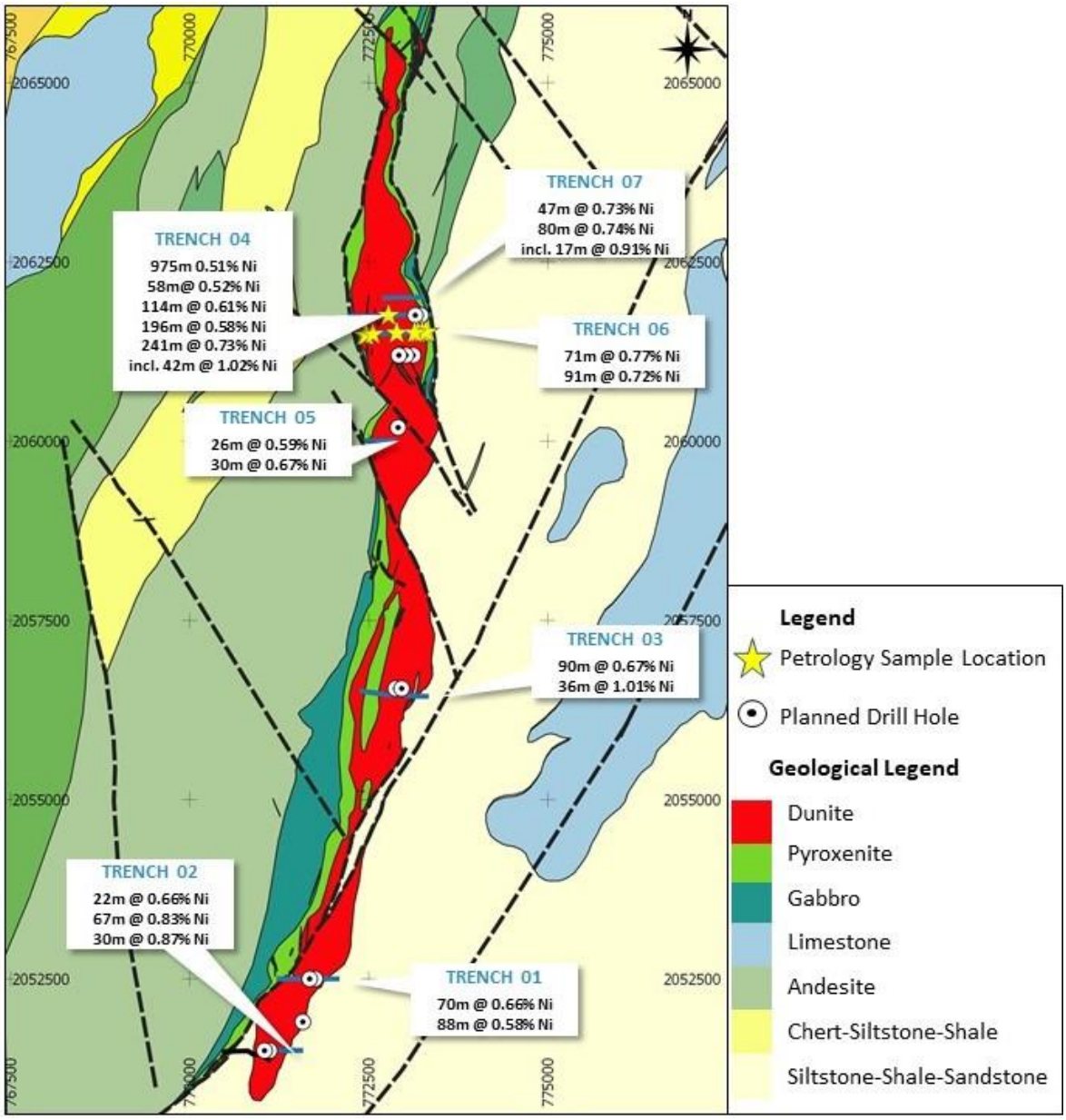

Figure 1: Petrological sample locations, with geology and previously announced significant trench results (Santana ASX Announcement, 17 July 2019).

The identification of chalcopyrite along with the nickel and cobalt sulphides supports the interpretation that the Phu Lon Nickel Prospect is a magmatic sulphide mineralised ultramafic intrusion with similar geological characteristics to the Jinchuan Deposit, China.

As expected with an ultramafic intrusion containing serpentine minerals, two of the six samples analysed recorded nickel within the serpentine crystal matrix of the ultramafic unit.

The Phu Lon Prospect has not been drilled previously. A maiden drilling program testing the extensive nickel mineralisation (Figure 1) and coincident Induced Polarisation (IP) anomalies (Figure 2) is planned mid-January 2020, targeting bulk tonnage nickel sulphide. This program comprises an initial 13 holes for 2,000 diamond drilled metres with first assay results from this program expected in February 2020.

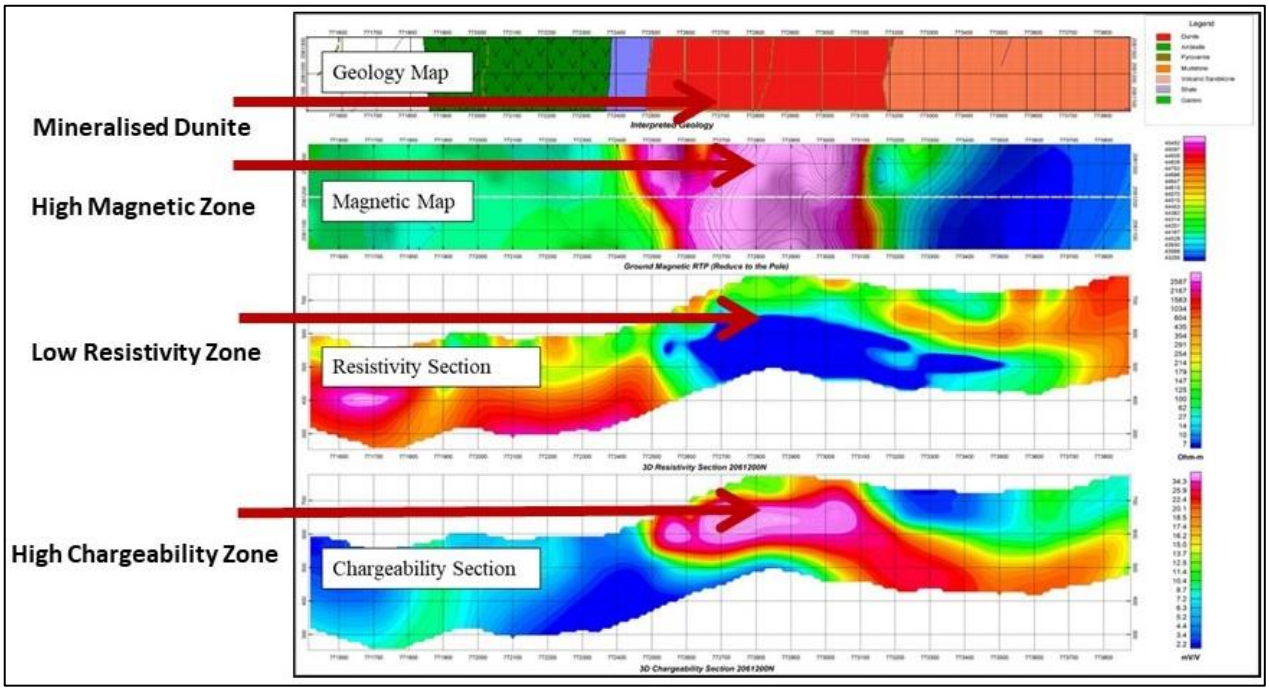

Figure 2: Induced Polarisation Survey, showing low resistivity and high chargeability, looking north on section 2,041,200N (WGS84 Zone 47). Interpreted to be an untested zone of nickel sulphide mineralisation at approximately 100m depth (Santana ASX Announcement, 17 July 2019).

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Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Pike, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Pike is the Chief Executive Officer of Mekong Minerals Limited and has sufficient experience which 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 Exploration Results, Mineral Resources and Ore Reserves.' Mr Pike consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Previous Disclosure - 2012 JORC Code

Information relating to Mineral Resources, Exploration Targets and Exploration Data associated with the Company's projects in this announcement is extracted from the following ASX Announcements:

- ASX announcement titled "Acquisition of Highly Prospective Sayabouly Project" dated 17 July 2019.

A copy of such announcement is available to view on the Santana Minerals Limited website www.santanaminerals.com. The reports were issued in accordance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Company-confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Appendix 1 – Location of Petrology Samples

Sample	Easting_WGS84 Zone 47	Northing_WGS84 Zone 47	Petrology Description	SEM Sulphide Minerals
226270	772429	2061474	Diopside-rich rodingite	Not analysed
226271	772441	2061477	Veined rodingite	Not analysed
226272	772444	2061475	Diopside-rich rodingite	Not analysed
226273	772451	2061475	Diopside-rich rodingite	Not analysed
226274	772469	2061478	Rodingite?	Not analysed
226276	772558	2061491	Sheared peridotite	Pentlandite, Chromite
226277	773324	2061528	Diorite	Chalcopyrite, Sphalerite
226278	773194	2061513	Partially serpentinised dunite	Mn-Ni-Co-Fe Oxides
226279	772881	2061506	Serpentinised dunite	No Sulphides identified
226280	772894	2061506	Serpentinised dunite	No Sulphides identified
226281	773190	2061511	Chert?	Not analysed
226282	773245	2061515	Chert?	Not analysed
226283	773296	2061520	Brecciated shattered pyroxenite	Not analysed
226284	773142	2061509	Gabbro	Not analysed
226285	772776	2061753	Partially serpentinised dunite	Pentlandite, Cobalt Pentlandite, NiFe Alloy (awaruite)

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	• *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.*	• Samples for Petrology and Scanning Electron Microscope analysis were taken from cut channels within trench excavations, collected 1-3m below surface and below the laterite/soil interface from weathered ultramafic intrusive rocks. Approximately 1kg sample was taken for petrology preparation.
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).*	• No drilling results are being reported.
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.*	• No drilling results are being reported.
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*	• All samples collected were logged in the field on a qualitative basis, with a full geological description utilizing a hand lens (10-20x) recorded. These samples were checked against the original field geological description by the consultant petrologist before thin and

Criteria	JORC Code explanation	Commentary
	costean, channel, etc) photography. • *The total length and percentage of the relevant intersections logged.*	polished section preparation.
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.*	• Petrology – A thin section was prepared by cutting rock sample with a diamond saw and smoothed to a flat surface utilising a revolving disk. The sample was then ground to a width of 0.03mm (30 microns), creating a thin section for microscope analysis. • Scanning Electron Microscope Analysis – a sample was sliced utilising a diamond saw and was smoothed to a flat surface using a rotating disk. The block was then mounted within epoxy resin and set, which was then ground and polished using finer grits through 200, 400, 800, and 1000, then polished with a cloth lap using cerium oxide powder.
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.*	• Petrology – a Leica DM 4500P petrological microscope was to describe the samples, under 20X to 400X magnifications. Plane polarised and cross polarised light was used for the analysis. • Scanning Electron Microscope (SEM) Analysis – a Hitachi S3400 SEM fitted with an energy dispersive detector, located at the University of New South Wales. The operating conditions were an accelerating voltage of 20Kv, beam current 20nA and variable spot size. All SEM images were taken under back-scattered electron mode.
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.*	• No verification sampling was undertaken due to it being an early-stage exploration project.
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.*	• Sample location points were taken by a handheld GPS unit.

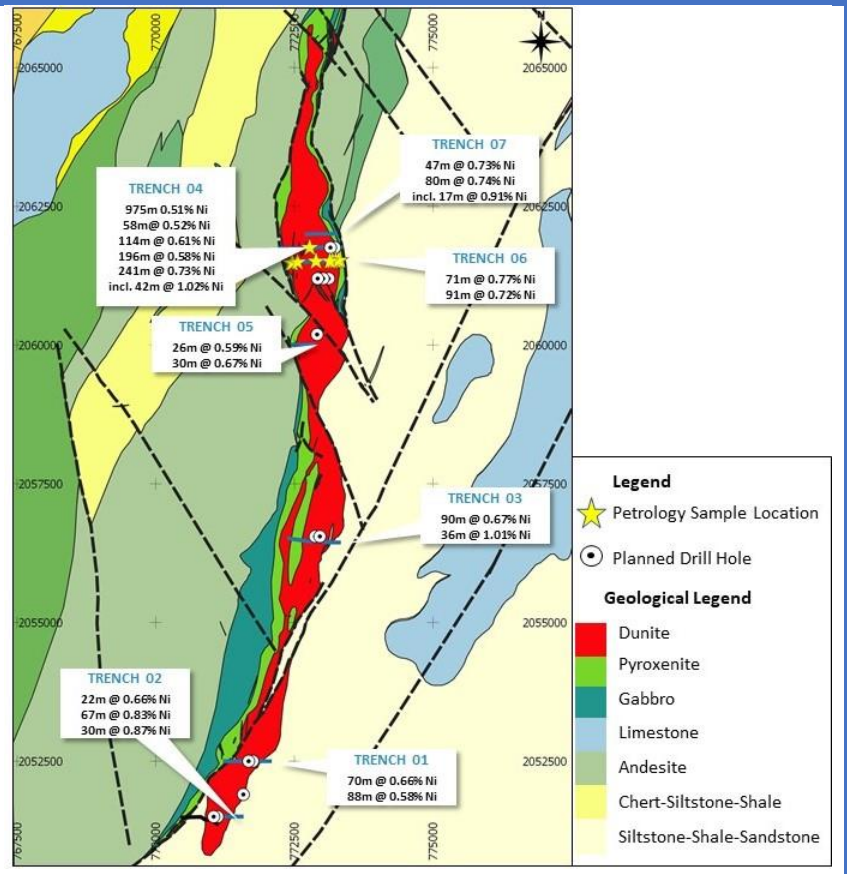
Criteria	JORC Code explanation	Commentary
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Data spacing was sufficient for the stage of the project (early-stage exploration) and no resource or ore reserve is being reported.
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.*	• Samples were taken from excavated trenches cut perpendicular to the strike of the ultramafic intrusive to limit sample bias.
Sample security	• *The measures taken to ensure sample security.*	• Chain of custody was managed by Mekong Mineral Limited's subsidiary, Dominion Laos, and was sent directly to the University of New South Wales.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No external audits or reviews were conducted aside from internal company review.

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.*	• In March 2018, Mekong Minerals completed a sale and purchase agreement with Dominion Mining Limited for the purchase of all of the shares in Dominion Metals Pty Ltd (Dominion Metals). Dominion Metals, through its wholly owned Lao subsidiary, Dominion (Lao) Co Ltd, holds the Sayabouly Project located in the Sayabouly province in western Lao. Mekong Minerals holds an effective 75% beneficial interest in the Sayabouly Project, with the remaining 25% beneficial interest being free carried to the completion of a definitive feasibility study. • The Sayabouly Exploration concession covers 488km^2, which expires in May 2020, with an application to be made for further renewal.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Exploration done by other parties</td><td>• Acknowledgment and appraisal of exploration by other parties.</td><td>• Prior to 2015 exploration completed on the Phu Lon Prospect with the Sayabouly Project was completed by Dominion (Lao) Co Ltd, which included soil, rock-chip, stream, and trench sampling and assaying, geological mapping and induced polarisation surveys.</td></tr>
<tr><td>Geology</td><td>• Deposit type, geological setting and style of mineralisation.</td><td>• The Phu Lon Nickel Prospect is a 14km x 1Km ultramafic intrusive mineralised in nickel-chromium-platinum-cobalt. The ultramafic is layered consisting of a basal unit of dunite, through to pyroxenite with an outermost layer of gabbro.</td></tr>
<tr><td>Drill hole Information</td><td>• 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 understanding of the report, the Competent Person should clearly explain why this is the case.</td><td>• The location of the samples are given in the table below:
•
<table><tr><th>Sample</th><th>Easting_WGS84</th><th>Northing_WGS84</th><th>Petrology Description</th><th>SEM Sulphide Minerals</th></tr><tr><td>226270</td><td>772429</td><td>2061474</td><td>Diopside-rich rodingite</td><td>Not analysed</td></tr><tr><td>226271</td><td>772441</td><td>2061477</td><td>Veined rodingite</td><td>Not analysed</td></tr><tr><td>226272</td><td>772444</td><td>2061475</td><td>Diopside-rich rodingite</td><td>Not analysed</td></tr><tr><td>226273</td><td>772451</td><td>2061475</td><td>Diopside-rich rodingite</td><td>Not analysed</td></tr><tr><td>226274</td><td>772469</td><td>2061478</td><td>Rodingite?</td><td>Not analysed</td></tr><tr><td>226276</td><td>772558</td><td>2061491</td><td>Sheared peridotite</td><td>Pentlandite, Chromite</td></tr><tr><td>226277</td><td>773324</td><td>2061528</td><td>Diorite</td><td>Chalcopyrite, Sphalerite</td></tr><tr><td>226278</td><td>773194</td><td>2061513</td><td>Partially serpentinised dunite</td><td>Mn-Ni-Co-Fe Oxides</td></tr><tr><td>226279</td><td>772881</td><td>2061506</td><td>Serpentinised dunite</td><td>No Sulphides identified</td></tr><tr><td>226280</td><td>772894</td><td>2061506</td><td>Serpentinised dunite</td><td>No Sulphides identified</td></tr><tr><td>226281</td><td>773190</td><td>2061511</td><td>Chert?</td><td>Not analysed</td></tr><tr><td>226282</td><td>773245</td><td>2061515</td><td>Chert?</td><td>Not analysed</td></tr><tr><td>226283</td><td>773296</td><td>2061520</td><td>Brecciated shattered pyroxenite</td><td>Not analysed</td></tr><tr><td>226284</td><td>773142</td><td>2061509</td><td>Gabbro</td><td>Not analysed</td></tr><tr><td>226285</td><td>772776</td><td>2061753</td><td>Partially serpentinised dunite</td><td>Pentlandite, Cobalt Pentlandite, NiFe Alloy (awaruite</td></tr></table></td></tr>
<tr><td>Data aggregation methods</td><td>• 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.</td><td>• No assay results are being reported</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>• 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’).</td><td>• No assay results are being reported</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
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.*	• 
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.*	• No assay data is being reported. • A total of six samples were analysed by a Scanning Electron Microscope (SEM), to ascertain the nature of nickel mineralisation. Of these six samples three samples recorded the presence of nickel sulphide mineralisation. The mineralisation is within an ultramafic intrusion containing serpentine crystals, which can include nickel within the matrix of these mineral crystals. Two of the six samples sent for SEM analysis recorded some nickel within the crystal matrix of the serpentine. • Of the 15 rock-chip samples taken for petrological study, only 6 of these samples were submitted for SEM analysis to determine the

Criteria	JORC Code explanation	Commentary
		nature of the nickel mineralisation. This was due to the high costs of this type of analysis and financial constrains of the company at time of reporting. With the capital raise being completed as part of Santana's acquisition of Mekong Minerals, it is planned that a portion of these funds will be used for further SEM analysis.
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.*	• Geological mapping cataloguing rock types, alteration, and structure defined the 14km x 1km ultramafic intrusion mineralised in nickel-chromium-platinum-cobalt. Induced polarisation geophysical surveys have previously been completed, mapping the potential dip of the intrusive, with magnetic data collection found to define the intrusive (due to high magnetite content), confirming geological mapping observations.
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.*	• Drilling will need to be completed, to confirm the deep extensions of the surface sampling previously completed. Further petrology and SEM analysis will be undertaken along with assaying of the samples, to ascertain the mode of nickel mineralisation. • Map of further drilling below:

Criteria	JORC Code explanation	Commentary