

7 APRIL 2020

Bramaderos gold-copper project, Ecuador

# High-grade surface samples at Espiritu epithermal gold-silver target

Results of up to 11.6gpt make Espiritu a high-priority drilling target

# **Key Points**

- Individual surface rock chip samples return up to 11.6g/t gold and 2,960g/t silver
- Espiritu outlined over an 800m strike with multiple interpreted lodes
- Mapping of the distribution of clay alteration, quartz veining, barite and metal values (goldsilver-lead-zinc-copper) indicate multiple parallel lodes
- Further sampling, trenching and mapping followed by drilling will take place as soon as Ecuador's COVID-19 restrictions allow
- "These are outstanding results which show Espiritu is a highly promising target. Our view is supported by its close proximity to porphyry gold-copper targets and the fact that it is within the regional corridor that includes the 2 million-ounce Dynasty Goldfield Deposit to the south-west." – Sunstone MD Malcolm Norris

Sunstone Metals Limited (ASX:STM) is pleased to announce outstanding surface sampling and rock chip results which further highlight the immense prospectivity of the Espiritu epithermal gold-silver target (Figure 1) at its Bramaderos Gold-Copper Project in Ecuador.

The Espiritu target was developed based on soil geochemical results and structural interpretations from field mapping and detailed ground magnetic data.

Results have been received from exploration undertaken prior to the temporary suspension of activities in Ecuador due to the Covid-19 pandemic. The exploration has included geological mapping, surface rock chip sampling and some trenching to test outcropping mineralisation.

The results include high gold and silver assays from rock chip samples of quartz-barite veining associated with argillic alteration. Other samples are highly anomalous in epithermal related pathfinder elements such as lead, zinc, and copper (Figures 2 and 3). These related elements can be detected using handheld XRF analysis which provides a guide for further detailed sampling and laboratory analysis.

The Espiritu trench, ES-01, is partially complete and some samples are awaiting analysis at the laboratory. The handheld XRF analyses shown in Figure 2 for zinc are used as a guide only to identify areas of alteration with

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the potential to host gold and silver, although this will only be confirmed once laboratory assays are completed.

Data so far suggests a north-north-east trend to the anomalous gold and pathfinder elements and this trend corresponds with linear breaks in the ground magnetic imagery. An 800m strike extent to mineralisation has been defined by work to date (Figure 2) and this could double to 1,600m based on early stage reconnaissance which has identified scattered gold anomalous samples along the north-north-east trend (Figure 3). This will be followed up once field work resumes.

Sunstone Managing Director Malcolm Norris said: "These are outstanding results. Espiritu sits within the previously defined 'epithermal corridor' that extends to the south-west where it incorporates the 2 millionounce epithermal Dynasty Goldfield. In light of these high-grades and the extensive strike length, we will resume sampling and trenching as soon as possible with a view to drilling at Espiritu at the first opportunity."

#### Update on Suspension of Field Activities in Ecuador

Exploration activities at the Bramaderos Project have been temporarily suspended in line with the COVID-19 directives of the Ecuadorian government. Sunstone is maintaining communication with all employees and stakeholders in Ecuador. Desktop activities, primarily in Australia, are ongoing as we interpret data to move target areas towards being drill-ready when the suspensions are lifted.

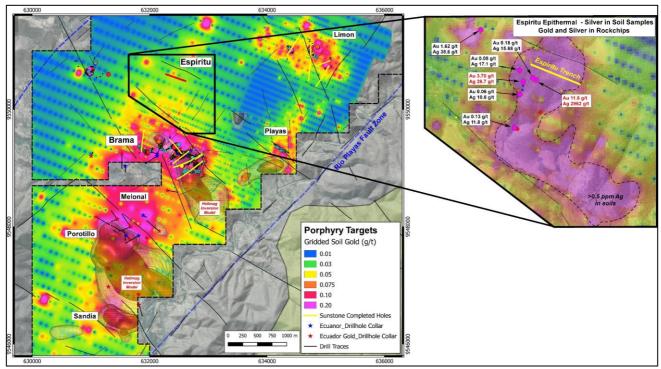
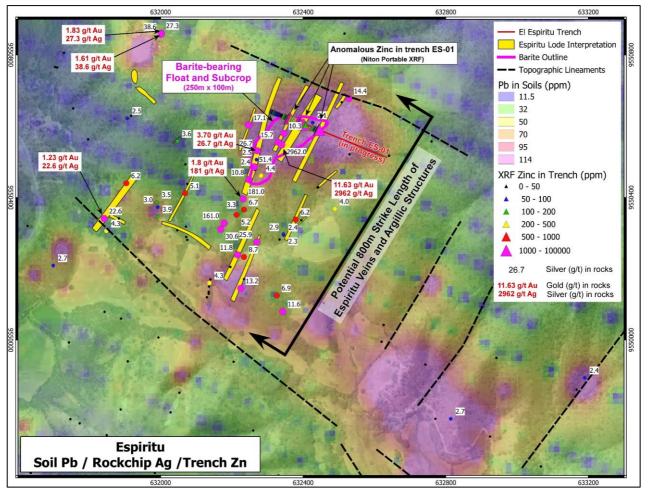


Figure 1: Location of the Espiritu target within the Bramaderos Project.





**Figure 2:** Espiritu target showing sampling to date, location of trench in progress and potential scale of the target area to be tested with drilling.



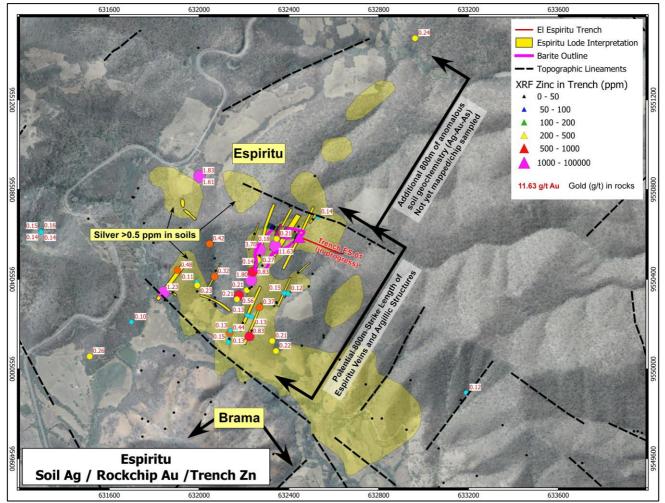


Figure 3: broader view of the Espiritu target showing potential strike extent to 1,600m

Sample ID	Easting	Northing	Elevation	Sample Type	Sample Method	Rock Type	Au (ppm)	Ag (ppm)	As (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
111112	632340	9550548	1111	Float	Grab	Altered Rock	11.63	2962	287.1	134320	>10000	5428
51481	632271	9550531	1086	Float	Grab	Altered Zone	3.698	26.67	22.7	58.1	723.8	264
CUFS03112	632002	9550861	1107	Outcrop	Chip	Vein	1.833	27.3	741	15	248	23
51356	632232	9550396		Float	Chip	Altered Zone	1.801	181	73.3	3658.5	>10000	751
110301	632002	9550858	1105	Outcrop	Grab	Hydrothermal Breccia	1.615	38.62	1048.9	15	1594.6	22
111314	631842	9550341	951	Outcrop	Chip	Altered Rock	1.229	22.61	131.6	69.7	2638.1	81
111308	632239	9550433	1032	Float	Chip	Andesitic Tuff	0.835	634	224.1	9626.3	190890	2619
111338	632225	9550145	945	Float	Chip	Altered Zone	0.826	13.24	27.4	27.4	519.5	181
111336	632178	9550328	997	Float	Chip	Altered Zone	0.558	161	295.9	250.2	15300	106
111332	631904	9550440	1016	Sub-Outcrop	Chip	Altered Zone	0.48	6.18	334.8	217.6	1482.1	617
CUEA030157	632137	9550160	838	Trench	2m Channel	Andesitic Breccia	0.442	4.3	43	47	171	655
111330	632047	9550558	1083	Outcrop	Chip	Altered Rock	0.416	3.6	2775.1	26.6	9.4	27
CUEA030163	632270	9550275	838	Trench	0.1m Channel	Vein	0.368	25.9	132	275	1880	521
111303	632069	9550412	976	Outcrop	Chip	Hydrothermal Breccia	0.315	5.11	204.1	9.7	70.8	8
111309	632263	9550486	1065	Float	Chip	Altered Rock	0.267	51.44	23.7	91.2	1488.8	81
111064	632962	9551475	1009	Float	Grab	Altered Zone	0.236	3.18	852.3	61.4	179.9	148
111335	631992	9550373	984	Outcrop	Chip	Altered Zone	0.232	3	16.5	8.6	44.7	25
111339	632343	9550080	927	Outcrop	Chip	Andesitic Tuff	0.216	11.6	146.3	26.6	791.7	27
111213	632346	9550580	1134	Subcrop	Chip	Altered Zone	0.214	10.34	74.2	434.4	197	326
111341	632326	9550125	967	Sub-Outcrop	Chip	Hydrothermal Breccia	0.213	6.9	70.8	9.9	108.7	70
111333	632213	9550351	1011	Sub-Outcrop	Chip	Hydrothermal Breccia	0.209	5.23	142.4	10.1	80.5	20
111337	632169	9550311	984	Float	Chip	Altered Zone	0.208	30.55	190.1	69.1	3329.8	71

**Table 1:** Rock chip assay data from Espiritu target

#### **About Sunstone Metals**

Sunstone has an advanced portfolio of exploration and development projects in Scandinavia and Ecuador. The portfolio comprises:

- The Bramaderos Gold-Copper Project where Sunstone owns an 87.5% interest with TSXV listed Cornerstone Capital Resources holding 12.5% (see ASX announcement dated 10<sup>th</sup> April 2017, 28<sup>th</sup> August 2019, and 7 January 2020). The Bramaderos gold-copper project is located in Loja province, southern Ecuador, and is considered to be highly prospective for the discovery of large porphyry gold-copper systems, and high-grade epithermal gold systems. Historical exploration results from drilling at Bramaderos together with recent exploration by Sunstone and joint venture partner Cornerstone Capital Resources (TSXV:CGP) indicate multiple fertile mineralised systems with significant discovery potential.
- 2. **Sunstone has a significant equity** interest of ~27% in Stockholm listed Copperstone Resources (COPP-B.ST) following the recent sale of the Viscaria Copper project.
- 3. The Southern Finland Gold Project includes the Satulinmäki gold prospect. Shallow diamond drilling was completed by the Geological Survey of Finland (GTK) during the period 2000-2005 and this was followed by a 7-hole diamond drilling program by Sunstone Metals in 2016. Intersections from GTK include 18m @ 4.1g/t Au from 50m downhole, including 3m @ 9.3g/t Au, and 4m @ 10.3g/t Au in drill hole R391. Intersections by Sunstone include 23.5m at 3.3g/t in SMDD007 and 2m at 10.5g/t in SMDD005. The Satulinmäki gold prospect is part of an earn-in JV with Canadian company Nortec Minerals, where Sunstone holds an ~82% interest, is funding on-going work, and has also acquired a significant land position, in its own right, in the district.
- 4. **The Scandinavian Lithium Project** includes the Kietyönmäki lithium prospect. Drilling by Sunstone has delivered 24.2m at 1.4% Li<sub>2</sub>O in a spodumene-bearing pegmatite. Kietyönmäki is also part of the JV with Nortec Minerals.

#### **Competent Persons Statement**

The information in this report that relates to exploration results is based upon information reviewed by Dr Bruce Rohrlach who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Rohrlach is a full-time employee of Sunstone Metals Ltd 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". Dr Rohrlach consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Mr Malcolm Norris, Managing Director of Sunstone Metals Ltd., has authorised this announcement to be lodged with the ASX.

For further information, please visit www.sunstonemetals.com.au Mr Malcolm Norris Managing Director Sunstone Metals Ltd Tel: 07 3368 9888 Email: mnorris@sunstonemetals.com.au

#### APPENDIX 1

#### The following Table and Sections are provided to ensure compliance with the JORC Code (2012 Edition)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	• The results announced here are from rock chip samples and hand cut channel samples within a trench.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	• Samples were taken randomly with focus on those exhibiting alteration and mineralisation, and samples from within a hand dug trench and hand cut channel samples.
	• 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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	• Rock chip and channel sampling points have been guided by geological mapping. The samples were dried, crushed to 70% passing 2mm, Split 1000g and pulverised to 85% passing 75microns. A 20g portion of this sample was used for multi-element analysis (IMS-230) and a 30g sample for Fire Assay Au (FAS-111).
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).	• This target area has not been drilled by Sunstone or during any phases of historical exploration.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed.	• This target area has not been drilled by Sunstone or during any phases of historical exploration.
	• Measures taken to maximise sample recovery and ensure representative nature of the samples.	• Samples from rock chips are representative of a local area only. Trench samples have been taken across the geological structural trend.
	• 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 relationship between sample recovery and grade has been established.
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.	• Trench samples and rock chips were logged for lithology, weathering, structure, mineralogy, mineralisation, colour, and other features. Logging and sampling were carried out according to Sunstone's internal protocols and QAQC procedures which comply with industry standards.
	• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	• Trench and rock chip samples are logged for lithology, weathering, structure, mineralogy, mineralisation, colour, and other features.
	• The total length and percentage of the relevant intersections logged.	• The trenches are logged in full, from start to finish of the excavation.
Sub-sampling techniques and	• If core, whether cut or sawn and whether quarter, half or all core taken.	• Standard rock chip samples and channel samples.
sample preparation	• If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Standard rock chip samples and channel samples.
	• For all sample types, the nature, quality and appropriateness of the sample preparation technique.	• Samples were sent to the LAC y Asociados Cia. Ltda. Sample Preparation Facility in Cuenca, Ecuador for sample preparation. The standard sample preparation for drill core samples (Code PRP-910) is: Drying the



Criteria	JORC Code explanation	Commentary
	• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	<ul> <li>sample, crushing to size fraction 70% &lt;2mm and splitting the sample to a 250g portion by riffle or Boyd rotary splitter. The 250g sample is then pulverised to &gt;85% passing 75 microns and then split into two 50g pulp samples. Then one of the pulp samples was sent to the MS Analytical Laboratory in Vancouver (Unit 1, 20120 102nd Avenue, Langley, BC V1M 4B4, Canada) for gold and base metal analysis.</li> <li>The sample preparation is carried out according to industry standard practices using highly appropriate sample preparation techniques.</li> <li>Sunstone used an industry standard QAQC programme involving Certified Reference Materials "standards" and blank samples, which were introduced in the assay batches.</li> <li>Standards (Certified Reference Materials) or analytical blanks were submitted at a rate of 1 in 28 samples. Field duplicates were also taken at a rate of approximately 1 in 28 samples.</li> <li>The check or duplicate assay results are reported along with the sample assay values in the final analysis report.</li> </ul>
	• 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.	• Sample sizes are considered to be appropriate for the style of sampling undertaken and the grainsize of the material, and correctly represent the style and type of mineralisation at the exploration stage.
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.	<ul> <li>Sunstone uses a fire assay gold technique for Au assays (FAS-111) and a four acid multi element technique (IMS-230) for a suite of 48 elements. FAS-111 involves Au by Fire Assay on a 30-gram aliquot, fusion and atomic absorption spectroscopy (AAS) at trace levels. IMS-20 is considered a near total 4 acid technique using a 20g aliquot followed by multi-element analysis by ICP-AES/MS at ultra-trace levels.</li> <li>This analysis technique is considered suitable for this style of mineralisation.</li> </ul>
	• 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.	<ul> <li>Data from a handheld XRF instrument are reported here from channel samples within trench ES-01.</li> <li>Handheld XRF data are used only as a guide to areas of potential mineralisation and samples from these areas are sent for laboratory analysis as described above.</li> </ul>
	• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	<ul> <li>Standards, blanks and duplicates are inserted ~1/28 samples. The values of the standards range from low to high grade and are considered appropriate to monitor performance of values near cut-off and near the mean grade of the deposit.</li> <li>The check sampling results are monitored, and performance issues are communicated to the laboratory if necessary.</li> </ul>
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel.	• Procedure checks have been completed by the Competent Person for exploration results for this announcement.
	• The use of twinned holes.	• No drilling has been undertaken in this area.



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Criteria	JORC Code explanation	<ul> <li>Commentary</li> <li>Sunstone sampling data were imported and validated using Excel.</li> </ul>			
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.				
	Discuss any adjustment to assay data.	Assay data were not adjusted.			
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.	• Sample co-ordinates are located by GPS and for trench samples measured along the length of the trench.			
	• Specification of the grid system used.	Southern Ecuador projection parameters:			
		Parameter Value			
		Reference Ellipsoid International 1924			
		Semi Major Axis			
		Inverse Flattening (1/f)			
		Type of Projection UTM Zone -17S (Datum PSAD56)			
		Central Meridian: -81.0000			
		Latitude of Origin 0.0000			
		Scale on Central Meridian 0.9996			
		False Northing 10000000			
		False Easting 500000			
	• Quality and adequacy of topographic control.	• The topographic control was compared against published maps and satellite imagery and found to be good quality.			
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• The samples were collected from an area of 800m x 800m, and the channel samples within trench ES-01 collected every ~1-2m.			
	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 data from these samples does not contribute to any resource estimate nor implies any grade continuity.			
	Whether sample compositing has been applied.	No sample compositing was done.			
Orientation of data in relation to geological	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	• Trench orientations and rock chip locations were appropriate for the interpreted geology providing representative samples.			
structure	• 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 sampling bias is expected at this stage. There has been no historical drilling on this target.			
Sample security	• The measures taken to ensure sample security.	<ul> <li>Sunstone sampling procedures indicate individual samples were given due attention.</li> <li>Sample security was managed through sealed individual samples and sealed bags of multiple samples for secure delivery to the laboratory by permanent staff of the joint venture.</li> <li>MS Analytical is an internationally accredited laboratory that has all its internal procedures heavily scrutinised in order to maintain their accreditation. MS Analytical is accredited to ISO/IEC 17025 2005 Accredited Methods.</li> </ul>			
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sunstone's and Cornerstone's sampling techniques and data have been audited multiple times by independent mining consultants during various			



Criteria	JORC Code explanation	Commentary
		<ul><li>project assessments. These audits have concluded that the sampling techniques and data management are to industry standards.</li><li>All historical data has been validated to the best degree possible and migrated into a database.</li></ul>

#### TABLE 1 – Section 2: Exploration Results

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 Bramaderos Exploration Concession is located in the Loja Province of southern Ecuador. The concession was granted to La Plata Minerales S.A. ("PLAMIN") in January 2017. PLAMIN is a subsidiary of Sunstone Metals Ltd. The concession is subject to a Joint Venture between Cornerstone Capital Resources Inc. and Sunstone Metals Ltd. There are no wilderness areas or national parks or areas of environmental significance within or adjoining the concession area. There are no native title interests.
	• 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 Bramaderos Exploration Concession was granted to La Plata Minerales S.A. ("PLAMIN") in January 2017. PLAMIN is now a subsidiary of Sunstone Metals Ltd. The Bramaderos Concession is subject to a Joint Venture between Sunstone Metals and Cornerstone. Sunstone has an 87.5% interest in the JV.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The historic exploration was completed by various groups over the period 1970-1984, 2001-2002 and 2004-2007. Most of the readily available historic data has been acquired and compiled into databases and a GIS project. Exploration by other parties has included stream sediment surveys, geological mapping, rock chip sampling (888 samples) and grid-based soil sampling (1324 samples), trenching and channel sampling (17 trenches), ground magnetic surveys (31 line kilometres), electrical IP surveys and diamond drilling (10426m).</li> <li>No significant historical exploration has been undertaken in the Espiritu target area.</li> </ul>
Geology	• Deposit type, geological setting and style of mineralisation.	• The deposit style being explored for includes intrusion- related and stockwork hosted porphyry Au-Cu systems plus low sulphidation epithermal gold-silver veins. The setting is a volcanic arc setting of Cretaceous age intrusions.
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>a. easting and northing of the drill hole collar</li> <li>b. elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>c. dip and azimuth of the hole</li> <li>d. down hole length and interception depth</li> <li>e. hole length.</li> </ul> </li> </ul>	<ul> <li>Details of the samples discussed in this announcement are in the body of the text.</li> <li>See Table 1 and Figures 1&amp;2 for the location of sampling and trenching activities.</li> </ul>
	• 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.	• Information included in announcement.



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Criteria	JORC Code explanation	Commentary
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.	<ul><li>Weighted averages were calculated over reported intervals according to sample length.</li><li>No grade cut-offs were applied.</li></ul>
	• 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.	• No aggregating of intervals undertaken at this stage.
	• The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Metal equivalents are not presented.
Relationship between mineralisation	• If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	• Figure 2 shows the interpreted strike orientation of the mineralised lodes based on mapping and interpretation of detailed magnetic data.
widths and intercept lengths	• 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').	• True widths of mineralised lodes are not known at this stage because no drilling has been undertaken on this target area.
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.	• See Figures 1-2 for maps showing distribution of samples.
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.	• Figures 1-2 above show the current interpretations of geology and the location of drill holes.
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.	• Figures 1 -2 above show various datasets that are being used to identify target areas and to guide current and future drilling.
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).	• The planned exploration program is outlined in the announcement.
	• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• See Figures 1-2 which show areas for further exploration.