

11 NOVEMBER 2020

# **Bramaderos Project, Ecuador**

# Drilling returns clear evidence of a polymetallic epithermal system at Espiritu

## **Key Points**

- Drilling at the Espiritu gold-silver target at Bramaderos date has intersected clear evidence of a polymetallic epithermal system
- Zinc in the form of sphalerite, and lead as galena are identifiable in the drill holes
- Surface sampling demonstrates a clear relationship between silver/gold and lead/zinc
- Drilling is ongoing and assays from the five holes completed to date are expected in November
- The drilling program is testing significant surface mineralisation in trench and rock chip sampling over an area of 600m x 200m. Trench samples include:
  - 21m at 82.4g/t silver, 0.3g/t gold, 1.4% zinc and 1.2% lead, including 4m at 415g/t silver, 0.9g/t gold, 6.9% zinc and 6% lead (see ASX announcement 13 July 2020)

Sunstone Metals Ltd (ASX: STM) is pleased to advise that it has made a highly promising start to drilling at the Espiritu gold-silver target (Figures 3-5) within its Bramaderos project in southern Ecuador.

Five diamond drill holes, for 925m have been completed, and a sixth hole is in progress. The drill holes have tested the area below high-grade silver-gold-lead-zinc samples in trench and rock chip samples (see ASX announcements 13 July 202 and 10 September 2020) and have intersected clear evidence of a polymetallic epithermal system to a depth of at least 200m below surface (Figures 1-2).

The drilling reveals that the epithermal system contains visible lead and zinc in the form of galena and sphalerite within calcite and barite veins and vein breccias over varying intervals (Figures 1–2).

This is important because lead and zinc are accompanied by silver and gold in weathered surface samples at Espiritu.

Additional holes are planned to test parallel targets and to test the southerly continuation of the mineralisation identified to date (Figure 4).

Should drilling at Espiritu be successful, a pipeline of similar targets will be advanced to the drilling stage over coming months (Figure 5).



Sunstone Managing Director Malcolm Norris said: "The visual inspection of the core has been very encouraging, and we look forward to receiving the assays. We are optimistic because lead and zinc are accompanied by silver and gold in weathered surface sampling at Espiritu, and we are seeing evidence in the vein and breccia textures of epithermal mineralisation".

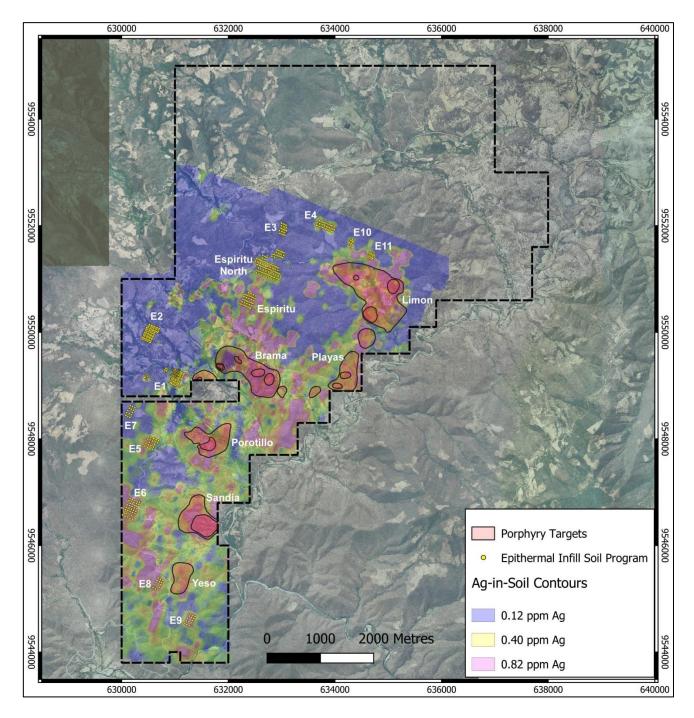


**Figure 1:** Photographs of drill core from drill holes ESDD004 and ESDD005 showing calcite veining and vein breccias with sphalerite (sp)



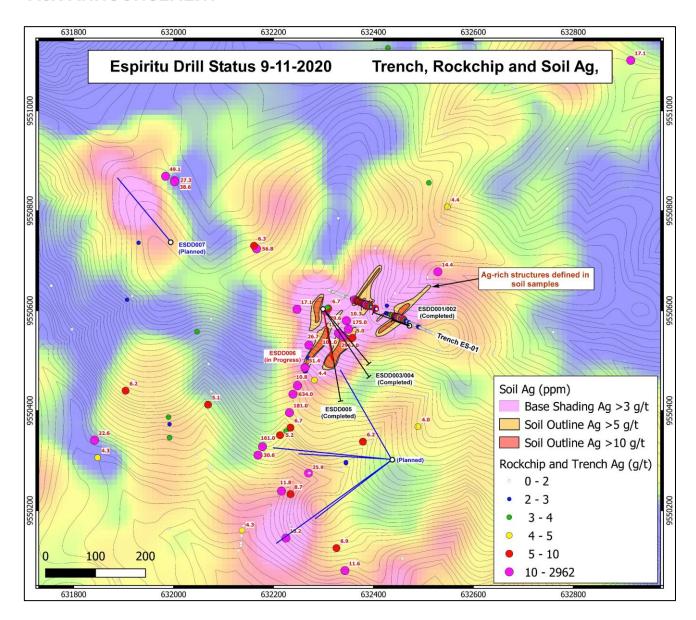
**Figure 2:** Drill hole ESDD005 from 260.5 to 264.8m showing argillic alteration, calcite veining and vein brecciation containing sphalerite (zinc sulphide) and galena (lead sulphide)





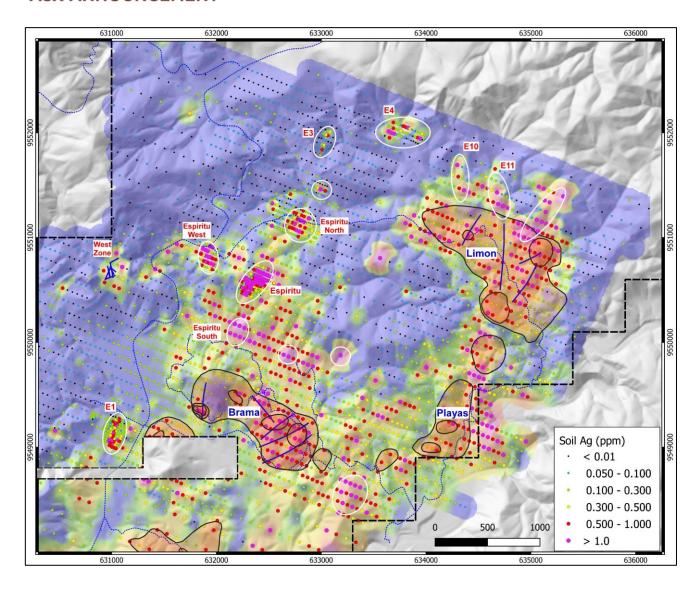
**Figure 3:** Bramaderos concession showing infill grid soil sampling areas in yellow dots which have been sampled and will be followed up during 2020. The exploration team are currently working at Espiritu, Espiritu Norte, E5, and areas of soil silver anomalism between Brama and Espiritu.





**Figure 4:** Espiritu target area showing current and planned drill hole locations, silver in rock chip samples and silver-in-soil as the backdrop image.





**Figure 5:** Location and status of other Espiritu style targets in the vicinity of the Espiritu drilling program. Target areas are outlined in white and are the subject of infill soil sampling and detailed geological mapping.



#### **About Sunstone Metals**

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

- 1. 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 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 ~24% in Stockholm listed Copperstone Resources (COPP-B.ST) following the sale of the Viscaria Copper project to Copperstone in 2019. Sunstone has further exposure to success at Viscaria, with Copperstone to make a Stage 2 payment upon issuance of an Environmental Permit for the development of Viscaria.
- 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 ~83% interest.
- 4. **The Scandinavian Lithium Project** includes the Kietyönmäki lithium prospect. Drilling by Sunstone has delivered 24.2m at 1.4% Li₂O 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.

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

TABLE 1 – Section 1: Sampling Techniques and Data

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 soil samples, historical rock chip samples, and hand cut trench samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	<ul> <li>Soil samples were taken on a grid basis</li> <li>Rock 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.</li> </ul>
	• 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 from Espiritu 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).	<ul> <li>The Espiritu target area has not been drilled by any phases of historical exploration.</li> <li>Current drilling by Sunstone is diamond core drilling and has drilled to various depths up to 301m. The diamond core was drilled delivering either HTW (70.9mm) or NTW (56mm) core. Drill core is oriented using a Reflex ACT II tool for bottom of hole.</li> </ul>
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond core recovery data for this drilling was measured for each drill run and captured in a digital logging software package. The data has been reviewed and core recovery was approximately 100% throughout.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core recovery was good, no extra measures were taken to maximise sample recovery.
	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.	Drill samples, 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.	Drill samples, and 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 drill holes and 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.	<ul> <li>Standard soil, rock chip samples, and channel samples.</li> <li>Half core was used to provide the samples that were submitted for assay. Quarter core samples were taken ~1 in every 28 samples for duplicate sampling. The</li> </ul>



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sample preparation		remaining core is left in the core trays.
	• If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Standard soil, rock chip samples, and channel samples.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	<ul> <li>Surface and drill core samples from Espiritu 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 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</li> </ul>
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	<ul> <li>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.	<ul> <li>For diamond core, the routine sample procedure is to always take the half/quarter core to the right of the orientation line (looking down hole) or the cut line (in cases where the orientation line was not reliable).</li> <li>For channel sampling within trenches, the routine sample procedure is to take consecutive samples over approximately 1m lengths</li> </ul>
	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>
	<ul> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> </ul>	<ul> <li>Handheld XRF data are used 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)	• Standards, blanks and duplicates are inserted $\sim 1/28$ samples. The values of the standards range from low



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	checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	<ul> <li>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.
accayg	The use of twinned holes.	Twin holes have not been drilled in this area.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sunstone sampling data were imported and validated using Excel.
	Discuss any adjustment to assay data.	Assay data were not adjusted. Core loss intervals are assigned assay values of zero where present.
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.	<ul> <li>The rock chip samples were collected from an area of 800m x 800m, and the channel samples within trench ES-01 collected every ~1-2m.</li> <li>The drill core samples were collected from five diamond drill holes from the Espiritu target, and with sample length generally ranging between 1-2m.</li> </ul>
	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	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	<ul> <li>Drilling orientations were appropriate for the interpreted geology providing representative samples.</li> <li>Trench orientations and rock chip locations were appropriate for the interpreted geology providing representative samples.</li> </ul>



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to geological 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.	<ul> <li>Sunstone's (and previously Cornerstone's) sampling techniques and data have been audited multiple times by independent mining consultants during various 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 at Bramaderos 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 epithermal gold-silver-polymetallic veins. The



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		setting at Espiritu is a volcanic arc setting of Cretaceous age intrusions.
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:     a. easting and northing of the drill hole collar b. elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar c. dip and azimuth of the hole d. down hole length and interception depth e. hole length.	<ul> <li>Details of the samples discussed in this announcement are in the body of the text.</li> <li>See Figures 3-5 for the location of soil sampling and trenching activities at Espiritu, and nearby areas.</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.
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 widths and intercept lengths	<ul> <li>If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>Figure 4 shows the interpreted strike orientation of the mineralised lodes based on mapping and interpretation of detailed magnetic data.</li> <li>True widths of mineralised lodes are not known at this stage.</li> </ul>
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 3-5 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 3-5 above show the current interpretations of geology. Figure 4 shows details of the current drill program.
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 3-5 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.



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	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 3-5 which show areas for further exploration.