

El Palmar gold-copper discovery, northern Ecuador

# Extensive gold-silver opportunity identified next to porphyry deposit

Surface sampling returns up to 6.2g/t gold and 269g/t silver from epithermal vein zone

## Key Points

- Surface rock chip and channel sampling has identified a high-grade epithermal gold-silver target at El Palmar
- The target is along structural strike from the T1 porphyry gold-copper deposit at El Palmar
- The combination of these results and other datasets shows the epithermal veins are extensive (mapped over an area of at least 600m x 400m) and structurally controlled
- This system of epithermal veins is consistent with a belt of high-grade gold occurrences identified from El Palmar to Sunstone's Verde Chico project, 4km to the south-west
- At Verde Chico, Sunstone is commencing exploration to identify extensions to the previously identified high-grade gold epithermal veins
- Across the El Palmar and Verde Chico concessions, Sunstone holds 3,671 ha of highly prospective terrain covering both porphyry gold-copper and epithermal gold targets

Sunstone Metals Ltd (ASX: STM) is pleased to announce that it has identified a large high-grade gold-silver target with significant potential at its El Palmar project in northern Ecuador.

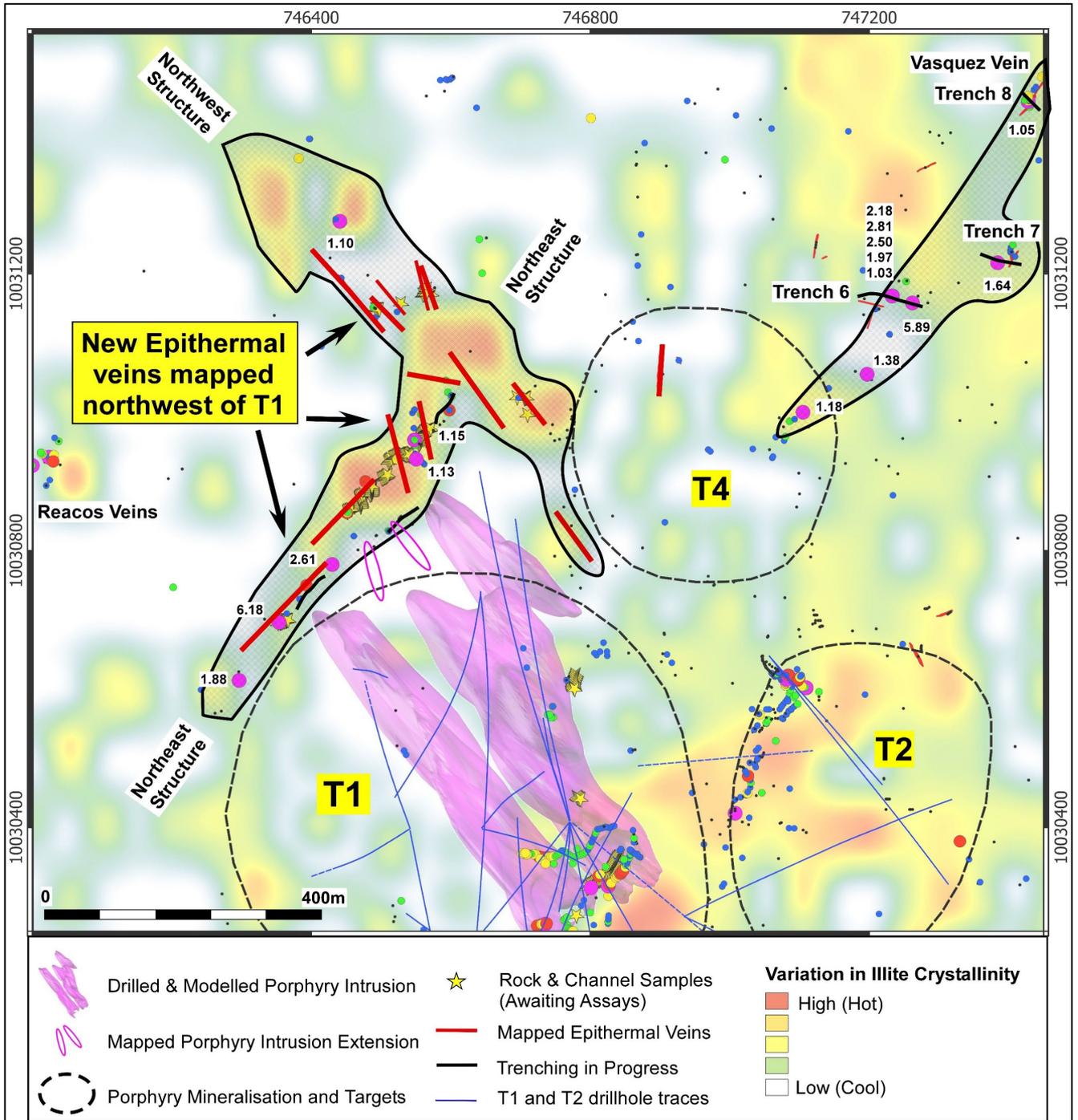
Surface sampling has identified the outcropping, well-mineralised epithermal gold-silver opportunity which has been interpreted to cover a large area of at least 600m by 400m.

Importantly, the target is along strike from the T1 porphyry deposit already discovered by Sunstone at El Palmar. The location of the epithermal prospect relative to the porphyry deposit bears significant geological parallels with Sunstone's Limon gold-silver epithermal discovery at Bramaderos in southern Ecuador. Sunstone recently announced a large Exploration Target for Limon (see ASX release dated 9 November 2023).

At El Palmar, channel and rock chip sampling have returned values up to 6.2g/t gold and 269g/t silver (Table 1). Areas of higher-grade gold and silver correlate with linear areas of mapped argillic alteration (Figure 1) that indicate a structurally-controlled system with multiple target areas across a large area. The epithermal system located northwest of T1 occurs along NW- and NE-trending faults (Figure 1).

Sunstone Managing Director Malcolm Norris said: "This is a highly promising result with immense upside. These results demonstrate high grades and significant scale. We will now move quickly to prepare it for drilling in the new year".

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**Figure 1:** Plan view of interpreted epithermal gold domains as defined by high crystallinity illite distribution – which maps high-temperature alteration associated with epithermal systems. Gold rock chip results are plotted as g/t within these domains and the orientation of epithermal veins are shown in bold red. The epithermal veins cover an area of at least 600m x 400m.

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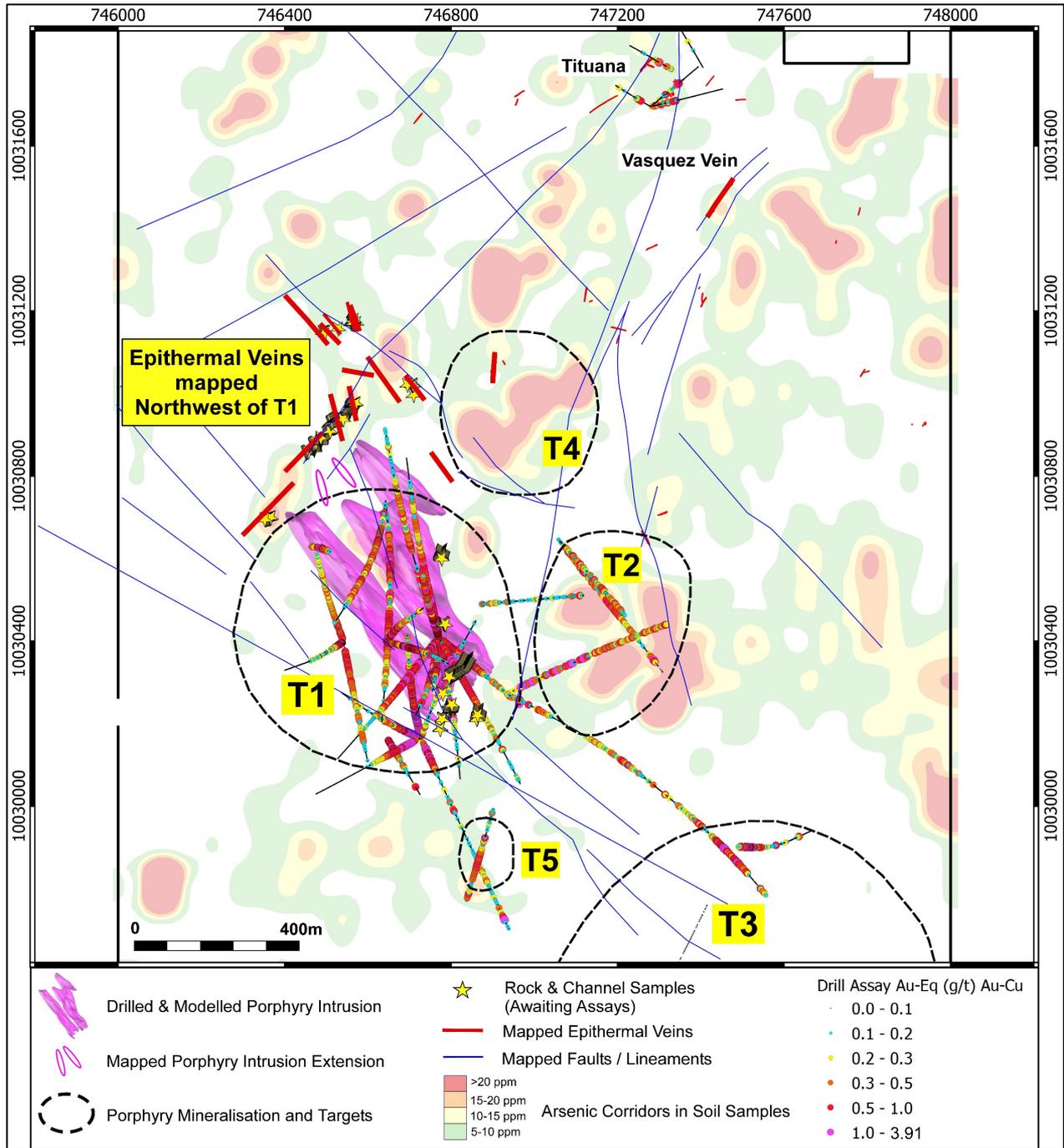


Figure 2: Plan view showing the location of the epithermal veins along structural trend to the northwest of the porphyry gold-copper deposits T1 to T5. Figure 1 shows the details of samples collected.

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Phase	Year	Sample ID	Feature	Sample Type	Width	Easting	Northing	Au_ppm	Ag_ppm	As_ppm	Mo_ppm	Cu_ppm	Pb_ppm	Zn_ppm
Sunstone	2023	R000480	Outcrop	Rockchip		746354	10030696	<b>6.178</b>	269	33.5	2.61	94.3	185.9	778
Sunstone	2023	R000758	Outcrop	Rockchip		746430	10030780	<b>2.614</b>	15.9	54.9	7.52	81	141.8	54
Sunstone	2023	R000474	Outcrop	Rockchip		746297	10030612	<b>1.875</b>	29.57	59.9	1.43	804.7	716	1072
Sunstone	2023	R000096	Outcrop	Rockchip	2.0	747197	10031055	<b>1.375</b>	6.48	33.7	2.04	293	1030	10000
Sunstone	2023	R000784	Outcrop	Channel	1.0	746550	10030932	<b>1.133</b>	4.57	100.7	19.04	48.3	55.6	43
Historical (GOEX)	2014	PPC-371	Outcrop	Rockchip	0.8	747262	10031158	<b>5.89</b>	2.4	19	7	70	81	67
Historical (GOEX)	2014	PPC-372	Outcrop	Rockchip	0.3	747233	10031168	<b>2.81</b>	18.4	8	10	465	427	2170
Historical (GOEX)	2014	PPC-369	Outcrop	Rockchip	1.0	747233	10031168	<b>2.50</b>	21.8	9	3	79	48	494
Historical (GOEX)	2015	PPC-392	Outcrop	Rockchip	0.2	747233	10031168	<b>2.18</b>	66.3	16	8	3930	1100	7280
Historical (GOEX)	2015	PPC-390	Outcrop	Rockchip	0.2	747233	10031168	<b>1.97</b>	45.2	19	8	3990	669	2290
Historical (GOEX)	2017	PPC-672	Outcrop	Rockchip	1.0	747384	10031216	<b>1.64</b>	1.4	20	5	118	121	379
Historical (GOEX)	2017	PPC-678	Outcrop	Rockchip	0.3	747105	10031000	<b>1.18</b>	2.4	77	1	47	270	280
Historical (GOEX)	2013	PPC-159	Outcrop	Rockchip	1.0	746548	10030960	<b>1.15</b>	3.5	37	2	42	167	52
Historical (CODELCO)	2012	23975	Outcrop	Channel	0.1	746441	10031276	<b>1.10</b>	4.8	139	2.3	384.4	1166.9	514
Historical (GOEX)	2014	PPC-347	Outcrop	Rockchip	2.0	747428	10031449	<b>1.05</b>	37.7	43	7	914	2790	11150
Historical (GOEX)	2014	PPC-370	Outcrop	Rockchip	2.0	747233	10031168	<b>1.03</b>	24.2	17	6	828	384	2380

**Table 1:** Rock chip assay results from within the area of epithermal veining shown in Figures 1 and 2

Modelling of the multiple mineralised quartz diorite bodies at the T1 porphyry system in 2023 revealed that they are highly elongate in the northwest-southeast direction, indicating their emplacement was strongly controlled by the set of NW-trending faults that intersect the Toachi Fault Zone.

Exploration involving mapping and channel sampling in October and November 2023 has focussed on looking for extensions of the T1 mineralised porphyry dykes along these NW faults. This work has identified areas of wide-spread alteration and stockwork-like oxidised sulphide veining within possible syn-mineral intrusions and surrounding host rock, suggesting potential for extensions of untested porphyry mineralisation adjoining and extending northwest from the T1 porphyry system.

The target lies at higher elevations northwest of T1. It is common in porphyry systems for deep porphyry fluids to migrate upward along faults into the shallower epithermal environment and form high-grade gold-silver and base metal epithermal deposits. A number of mineralised intermediate sulphidation epithermal veins have been mapped and sampled in this area, where hot mineralising fluids are expected to have migrated up to shallower levels along NW-trending faults. Mapping is identifying both NW-trending and NE-trending faults off the NW side of T1 that exhibit epithermal veining with demonstrated gold and silver mineralisation (Figures 1 and 2).

### Verde Chico

Exploration by Sunstone has commenced at the Verde Chico project, which is located between 2 and 7km west of El Palmar.

The concession covers 2,872ha and was previously explored by Rio Tinto in the early 1990's and by Canadian junior, Balaclava Mines Inc. in the late 1990's. This historical exploration comprised reconnaissance sampling, followed by trenching and some drilling (total 4,435m), and identified a significant epithermal gold system.

Significant results include 24m at 21.1g/t gold (Peligrosa vein) and 39m at 3.1g/t gold (Gato vein).

Drilling returned results including 52.5m at 1.3g/t gold from 2m in hole RVC08, and 41.5m at 1.3g/t gold from 1m in hole RVC07.

The area of historically identified gold mineralisation covers only 55ha (1,100m x 500m) of the 2,872ha concession so considerable surface exploration is planned to identify additional targets. The first phase of work is exploring the area to the south and southwest of the known gold mineralisation.

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Significantly, the Toachi Fault zone – a regional controlling structure for significant porphyry and epithermal mineralisation at El Palmar and SolGold’s Cascabel project transects the Verde Chico concession .

The El Corazon gold mine, which is currently operating- and has been mined for over 20 years, is believed to have contained between 300,000 and 500,000 ozs of gold in a high-grade epithermal system (based on historical production records), and is also related to the regional Toachi fault system. The mine is located between the El Palmar and Verde Chico concessions (Figure 4).

The 2.66 billion tonne Alpala copper-gold deposit is located 65km NE of El Palmar and grades 0.25g/t gold and 0.37% copper (0.53% CuEq), and the nearby 0.53 billion tonne Tandayama-America deposit grades 0.19g/t gold and 0.24% copper (0.36% CuEq) (Figure 5; see also [www.solgold.com.au](http://www.solgold.com.au) for details). Age dating of the rocks associated with mineralisation at El Palmar T1 has confirmed that they are the same geological age as Alpala and are hosted within the northern section of the Eocene volcanic arc. Also in the vicinity is the 1 billion tonne Miocene age Llurimagua copper-molybdenum porphyry deposit grading 0.89% copper and 0.04% molybdenum (1.0% CuEq).

### Bramaderos Project

Sunstone is also active at its southern Ecuador Bramaderos project (Figure 6) where surface sampling at the Limon gold-silver deposit is defining new drill targets for testing in 2024. Sunstone released an Exploration Target for the Limon gold-silver deposit of 0.9 – 1.7Moz AuEq within 30 – 44 million tonnes at grades of between 0.9 to 1.2g/t AuEq. The Limon deposit remains open in all directions (see ASX announcement dated 9<sup>th</sup> November, and ‘About Sunstone Metals’ on pages 11 of this announcement).

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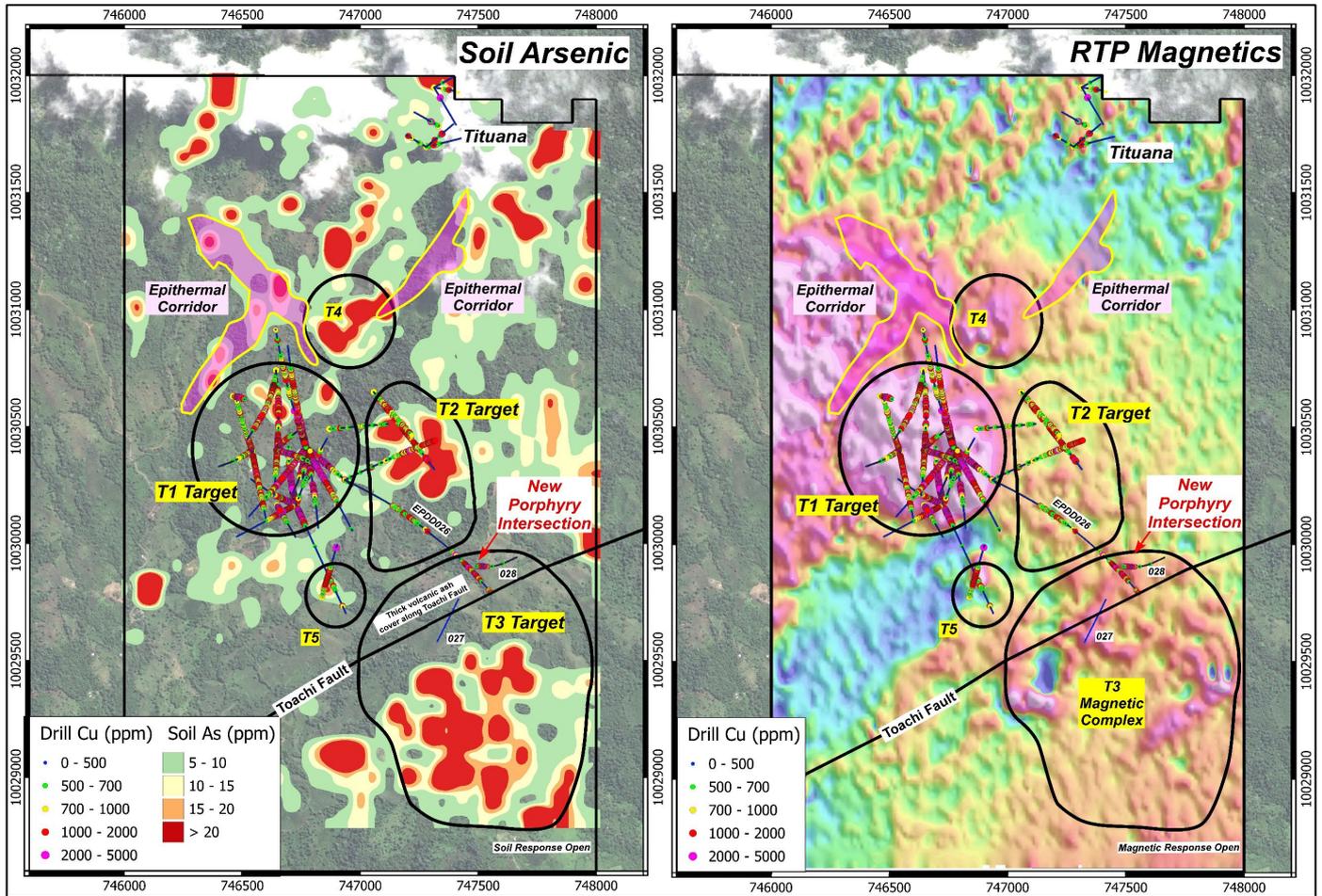
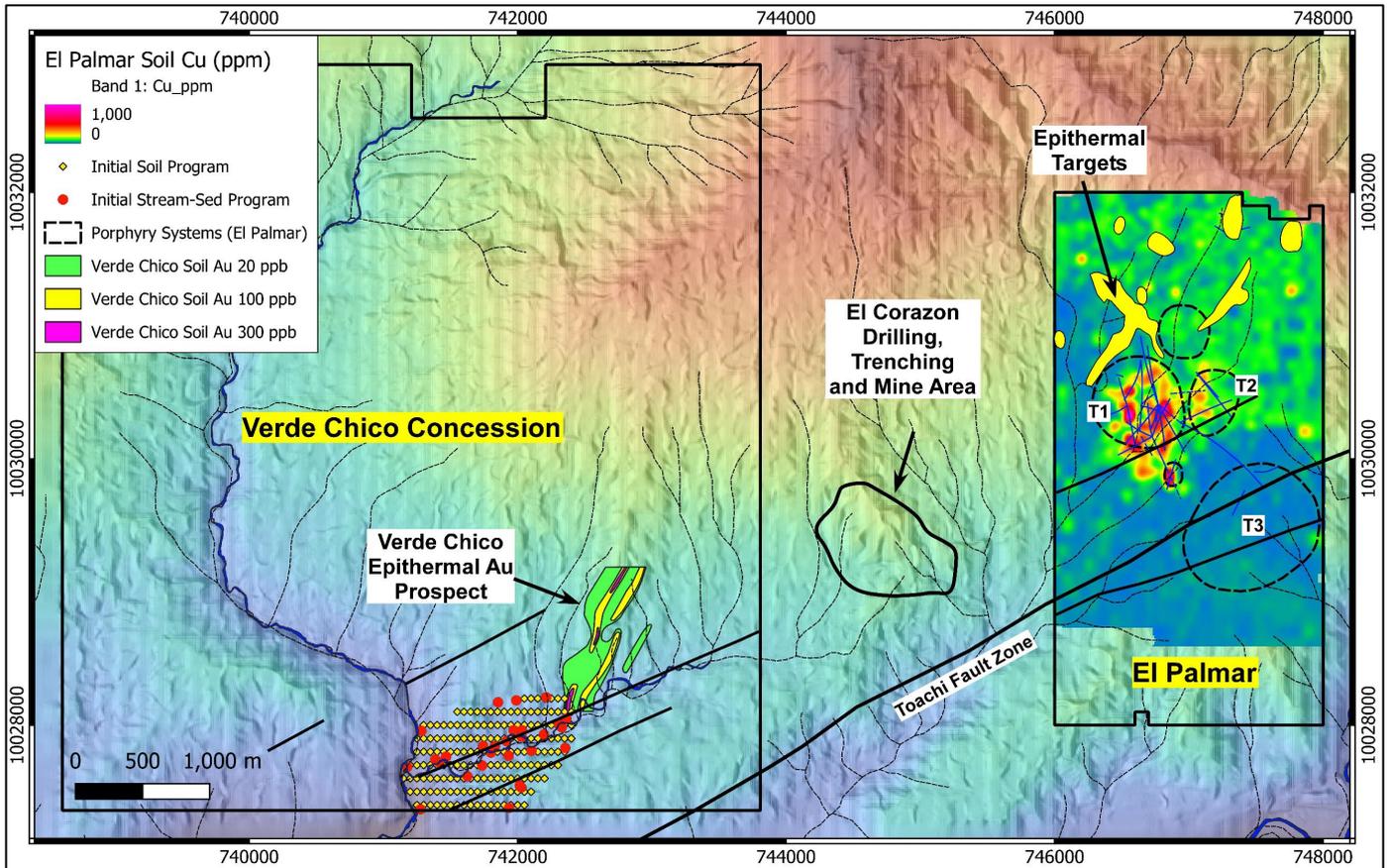


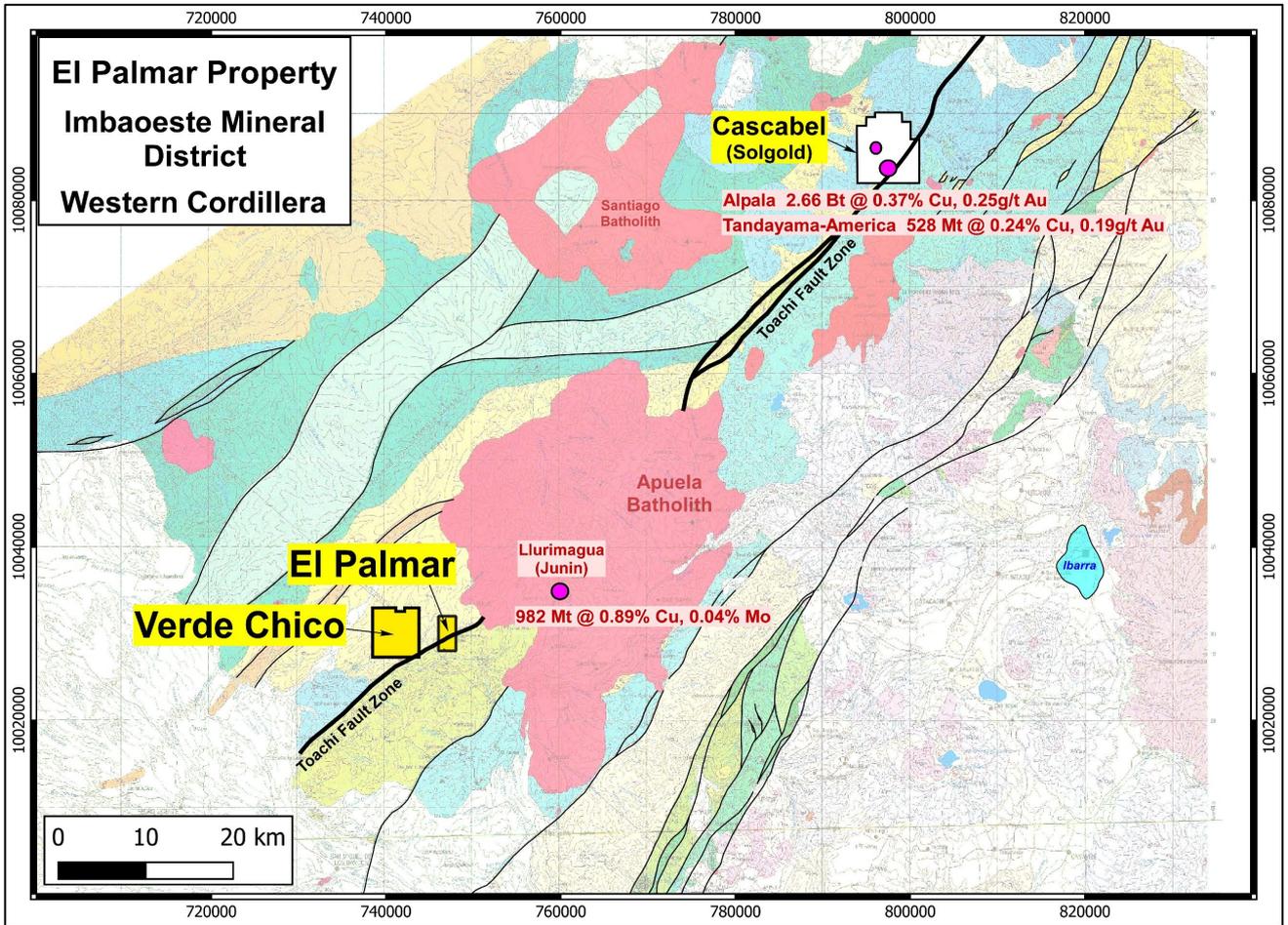
Figure 3: Location of the T1 to T5 porphyry targets, and epithermal domains. Background image is RTP magnetics (right) and arsenic in soils (left).

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**Figure 4:** Image showing the El Palmar and Verde Chico concessions, and the location of the Verde Chico gold prospect as defined by exploration by Rio Tinto and Balaclava Mines in the 1990's. The El Corazon mine (operating for >20years) is an epithermal gold deposit.

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**Figure 5:** Location of the El Palmar project relative to the giant Llurimagua (Codelco-Enami), Alpala and Tandayama-America (Cascabel project, SolGold) porphyry deposits, and the Toachi fault system.

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**Figure 6:** Location of the El Palmar project in northern Ecuador, the Verde Chico project nearby, and the Bramaderos Project in southern Ecuador.

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For further information, please visit [www.sunstonemetals.com.au](http://www.sunstonemetals.com.au)

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**Competent Persons Statement**

The information in this report that relates to exploration targets and 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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### About Sunstone Metals

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

1. **The Bramaderos Gold-Copper Project** where Sunstone owns an 87.5% interest, and SolGold Canada, Inc. (formerly Cornerstone Capital Resources) a subsidiary of SolGold, holding 12.5% (loan carried through to start of commercial production) (see ASX announcement dated 10 April 2017, 28 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. The Bramaderos concession is host to multiple fertile mineralised systems with significant discovery potential.

The Brama-Alba porphyry gold-copper-silver deposit, within the Bramaderos concession contains an initial Mineral Resource estimate of 156Mt at 0.53g/t AuEq for 2.7Moz gold-equivalent\*. In addition to this is the Bramaderos project porphyry gold-copper-silver Exploration Target of between 3.3Moz and 8.6Moz AuEq\* within 255 to 360Mt at a grade between 0.40 and 0.74g/t AuEq\* (see ASX release dated 13 December, 2022).

JORC Classification	Tonnage (Mt)	Au (g/t)	Cu (%)	Ag (g/t)	AuEq (g/t)	AuEq* (Mozs)
Indicated	9	0.38	0.09	1.1	0.53	0.2
Inferred	147	0.35	0.11	1.3	0.53	2.5
<b>Total</b>	<b>156</b>	<b>0.35</b>	<b>0.11</b>	<b>1.3</b>	<b>0.53</b>	<b>2.7</b>

An Exploration Target for the Limon epithermal gold-silver deposit was released on 9th November 2023 consisting of between approximately 30 and 44 million tonnes at a grade of between 0.9 and 1.2g/t AuEq\*, for between 0.9 and 1.7mill oz AuEq\*

The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement for the Mineral Resource estimate and Exploration Target referred to above and, that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. 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 announcement.

The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource for the target area reported. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

\*The gold equivalent calculation formula for porphyry gold-copper-silver mineralisation is  $AuEq(g/t) = (Au \text{ grade} \times Au \text{ price} \times Au \text{ recov} / 31.1035) + (Ag \text{ grade} \times Ag \text{ price} \times Ag \text{ recov} / 31.1035) + (Cu \text{ grade} \times Cu \text{ price} \times Cu \text{ recov} / 100) / (Au \text{ price} \times Au \text{ recov} / 31.1035)$ . The prices used were US\$1,800/oz gold and US\$9,500/t copper and US\$22/oz silver. Recoveries are estimated at 89% for gold, 85% for copper, and 60% for silver based on metallurgical studies.

\*The gold equivalent calculation formula for epithermal gold-silver mineralisation is  $AuEq(g/t) = Au(ppm) + (Ag(ppm)/82)$ . The prices used were US\$1,800/oz gold and US\$22/oz silver. Recoveries are estimated at over 90% for gold and 90% for silver from metallurgical studies.

In Sunstone's opinion all the elements included in the metal equivalents calculation have reasonable potential to be recovered and sold.

2. **The El Palmar Copper-Gold Project** where Sunstone holds 70% of the highly prospective 800ha El Palmar gold-copper porphyry project in Ecuador. Sunstone can acquire 100% through a Staged Acquisition Agreement. A Staged Acquisition Agreement to acquire the nearby Verde Chico Project has also been signed. The El Palmar and Verde Chico gold-copper projects are located in Imbabura province, northern Ecuador, within the same geological belt that includes the giant Alpala, Tandayama-America and Llurimagua porphyry copper-gold and copper-molybdenum deposits.

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**TABLE 1 – Section 1: Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The rock chip sampling was carried out over identified outcrops, typically in creek exposures.</li> </ul>
	<ul style="list-style-type: none"> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul style="list-style-type: none"> <li>Rock chip sampling was representative of the outcrop areas identified in creeks.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Rock chip and channel sampling points have been guided by geological mapping. The samples from El Palmar 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).</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>The El Palmar epithermal gold-silver target areas in this announcement have not yet been drilled.</li> <li>Historical drilling at Verde Chico was diamond core. Historical records have been reviewed.</li> <li>No verification drilling has yet been undertaken.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul style="list-style-type: none"> <li>Diamond core from Verde Chico historical drilling has not been re-logged or re-sampled. All reports from Verde Chico are based on historical information sited by Sunstone.</li> </ul>
	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	<ul style="list-style-type: none"> <li>No information on core recovery at Verde Chico has been sited.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No relationship between sample recovery and grade has been established.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Rock chip samples were logged for lithology, weathering, structure, mineralogy, mineralisation, colour, and other features. Recent mapping and sampling for the El Palmar project were carried out according to Sunstone's internal protocols and QAQC procedures which comply with industry standards.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> </ul>	<ul style="list-style-type: none"> <li>Rock chip samples are logged for lithology, weathering, structure, mineralogy, mineralisation, colour, and other features.</li> </ul>
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Sample intervals were individual sample points and channels up to 2.0m long.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	<ul style="list-style-type: none"> <li>Sample details relate to rock chips and channel samples not drill core.</li> </ul>
	<ul style="list-style-type: none"> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> </ul>	<ul style="list-style-type: none"> <li>This announcement relates to rock chip sampling.</li> </ul>
	<ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul style="list-style-type: none"> <li>Historical surface rock sampling at El Palmar were collected by 3 different companies. GOEX S.A. samples were analysed at Bureau Veritas Laboratories in Peru. Lowell Mineral Exploration rocks were analysed by ALS Minerals, with sample preparation involving fine crushing 70% passing 2mm (Method CRU-31), crushed sample split (Method SPL-21) and</li> </ul>

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Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li><i>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.</i></li> <li><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>pulverise 1000g to 85% passing 75um (Method PUL-32). Codelco surface rock samples were analysed by ACME Labs in Vancouver. Samples were crushed and split with 250 grams pulverised to 200 mesh (Method - R200-250)</p> <ul style="list-style-type: none"> <li>The sample preparation for the current phase of rock chip sampling 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> <li>Once assay results are received the results from duplicate samples are compared with the corresponding routine sample to ascertain whether the sampling is representative.</li> <li>Sample sizes are considered to be appropriate for the style of sampling undertaken and the grain size of the material, and correctly represent the style and type of mineralisation at the exploration stage.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <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> <li>A handheld pXRF instrument is used on site for verification of anomalous metal values and to assist with the geological description and mineral identification. No specific data from this instrument are referenced in this announcement.</li> <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>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Procedure checks have been completed by the Competent Person for exploration results for this announcement.</li> <li>Twin holes have not been drilled in these areas.</li> <li>Sunstone sampling data were imported and validated using Excel.</li> <li>Assay data were not adjusted.</li> </ul>

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Criteria	JORC Code explanation	Commentary																				
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Sample co-ordinates are located by GPS and for trench samples measured along the length of the trench.</li> </ul>																				
	<ul style="list-style-type: none"> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>Ecuador projection parameters: <table border="1" data-bbox="890 483 1449 931"> <thead> <tr> <th>Parameter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Reference Ellipsoid</td> <td>International 1924</td> </tr> <tr> <td>Semi Major Axis</td> <td></td> </tr> <tr> <td>Inverse Flattening (1/f)</td> <td></td> </tr> <tr> <td>Type of Projection</td> <td>UTM Zone -17S (Datum PSAD56)</td> </tr> <tr> <td>Central Meridian:</td> <td>-81.0000</td> </tr> <tr> <td>Latitude of Origin</td> <td>0.0000</td> </tr> <tr> <td>Scale on Central Meridian</td> <td>0.9996</td> </tr> <tr> <td>False Northing</td> <td>10000000</td> </tr> <tr> <td>False Easting</td> <td>500000</td> </tr> </tbody> </table> </li> </ul>	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
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<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>The rock chip and channel samples reported were collected along outcrops. Channel samples range in width from 0.3 to 2.0m</li> </ul>																				
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The data from these samples does not contribute to any resource estimate nor implies any grade continuity.</li> </ul>																				
	<ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>No sample compositing was done.</li> </ul>																				
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> </ul>	<ul style="list-style-type: none"> <li>Trench orientations and rock chip locations were appropriate for the interpreted geology providing representative samples.</li> </ul>																				
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No sampling bias is expected at this stage.</li> </ul>																				
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <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>																				
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Sunstone'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>																				

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

<i>Criteria</i>	<i>JORC Code explanation</i>	<i>Commentary</i>
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The El Palmar property is located in Imbabura province and is held by an Ecuadorian registered company 'GOEX'. Due diligence to date show that 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.</li> <li>Sunstone and GOEX have entered into a Staged Acquisition Agreement where Sunstone may earn up to 100% based on defined milestones.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The El Palmar exploration concession was granted in 2003 and is held 100% by GOEX.</li> <li>Sunstone owns 70% of GOEX</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The historic exploration at El Palmar was completed by various groups over the period 1990's, 2007-2008, 2011-2012 and GOEX (2012 to 2020). 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, some local soil sampling, channel sampling and limited diamond drilling (3 holes).</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The deposit style being explored for includes intrusion-related and stockwork hosted porphyry gold-copper systems plus epithermal gold-silver-polymetallic veins. The setting at El Palmar is a volcanic arc setting of Eocene age intrusions.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <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:               <ol style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Details of the samples discussed in this announcement are in the body of the text.</li> <li>See Figures 1-3 for the location of previous drilling at El Palmar.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Information included in announcement.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Weighted averages were not applied.</li> <li>No grade cut-offs were applied.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Aggregating of intervals was not undertaken.</li> </ul>
	<ul style="list-style-type: none"> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Metal equivalents are not presented for the rock chip sampling results in this announcement.</li> <li>Metal equivalents are presented in the 'About Sunstone Metals' section, with appropriate explanations of input</li> </ul>

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Criteria	JORC Code explanation	Commentary
		parameters.
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>The geometry of the mineralisation relative to the sampling program is not completely known at this stage of exploration. .</li> </ul>
	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>True widths of mineralised lodes are not known at this stage.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>See Figures 1-2 for maps showing distribution of samples.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Figures 1-5 above shows the current interpretations of geology.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Figure 1-4 above shows various datasets that are being used to identify target areas and to guide current and future drilling.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	<ul style="list-style-type: none"> <li>The planned exploration program is outlined in the announcement.</li> </ul>
	<ul style="list-style-type: none"> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>See Figures 1-4 which show areas for further exploration.</li> </ul>