

23 JANUARY 2024

## SIGNIFICANT EXPLORATION TARGET

## SUNDAY CREEK GOLD-ANTIMONY PROJECT

Melbourne, Australia — Southern Cross Gold Ltd ("SXG" or the "Company") (ASX:SXG) is pleased to announce the maiden gold and antimony *Exploration Target* at its flagship 100%-owned Sunday Creek Project in Victoria, Australia (Figures 3 and 4). The Exploration Target has been developed to demonstrate the scale and high-grade gold-antimony potential of the Sunday Creek Project that has been drilled over the last year and is the first step in the pathway to a resource.

## HIGHLIGHTS

- The Exploration Target for the Sunday Creek project covers only 620 m or about 50% of the known strike of the main drill area and encompasses the Rising Sun and Apollo areas (see Figures 1, 2 and 3). This Target area represents <10% of the 11 km strike of the dyke host across the project.
- The estimated range of potential mineralisation for the Exploration Target is (also see Table 1):

4.4 - 5.1 million tonnes grading at 7.2 g/t AuEq to 9.7 g/t AuEq for 1.0Moz AuEq to 1.6Moz AuEq

The potential quantity and grade of the Exploration Target is conceptual in nature and therefore is an approximation. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The Exploration Target has been prepared and reported in accordance with the 2012 edition of the JORC Code.

• Drilling with 4 rigs within, along strike and down dip from Rising Sun and Apollo continues.

#### **EXPLORATION TARGET**

The approximate Exploration Target ranges are listed in Table 1 and locations shown in Figure 1.

 Table 1. Sunday Creek Exploration Target for Apollo and Rising Sun at the Sunday Creek Project

| Range      | Tonnes (Mt) | AuEq g/t* | Au g/t | Sb % | Au Eq (Moz) | Au (Moz) | Sb (kt) |
|------------|-------------|-----------|--------|------|-------------|----------|---------|
| Lower Case | 4.4         | 7.2       | 5.3    | 1.2  | 1.0         | 0.74     | 53.5    |
| Upper Case | 5.1         | 9.7       | 7.8    | 1.2  | 1.6         | 1.28     | 62.8    |

**Southern Cross Gold's Managing Director, Michael Hudson, states**, "Sunday Creek is a rare high-grade discovery. This Exploration Target is the first early opportunity to demonstrate the scale and high-grade potential as suggested by the last year of successful drilling. Notably, the Exploration Target is constrained to the current drill footprint at Apollo and Rising Sun as they contain sufficient drilling to determine continuity and infer grade ranges. This represents approximately half the strike of the main drill area and significant potential exists to increase the size of the exploration target with high grade drill results drilled for up to 450 m beyond the Exploration Target area. These are early days and we expect further drilling will continue to expand the multi-million-ounce potential and high-grade tenor of Sunday Creek."

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ABN: 70 652 166 795 ASX Code: SXG Issued Capital: 184.0M fully paid shares



#### **EXPLORATION TARGET UPSIDE**

The Exploration Target covers 50% of the strike of the core drill area. The other half of the area has not been drilled to the intensity required to include in this Exploration Target, highlighting the potential to further increase the overall gold-antimony endowment of the Sunday Creek Gold-Antimony Project. Drilled prospect areas **not** yet included in the Exploration Target include:

- Apollo East: up to 260 m above and east of the exploration target, with drill results including:
  - SDDSC063: **1.5 m @ 6.6 g/t AuEq** (5.0 g/t Au, 1.0% Sb) from 25.2 m
  - o SDDSC038: 1.4 m @ 13.1 g/t AuEq (0.4 g/t Au, 8.0% Sb) from 305.5 m
- Apollo West: 70 m west of the Apollo exploration target area, with drill results including:
  - SDDSC093: 3.9 m @ 1.5 g/t AuEq (1.0 g/t Au, 0.3% Sb) from 503.0 m
  - o SDDSC093: 0.1 m @ 10.5 g/t AuEq (8.7 g/t Au, 1.2% Sb) from 524.8 m
  - SDDSC093: 0.2 m @ 11.1 g/t AuEq (11.1 g/t Au, 0.0% Sb) from 528.7 m
- Apollo Deep: 300 m down dip extension below the exploration target area, with drill results including:
  - o SDDSC068: 9.6 m @ 2.0 g/t AuEq (1.9 g/t Au, 0.1% Sb) from 1,010.4 m
- Golden Dyke: 175 m west of the exploration target area, with drill results including:
  - o SDDSC049: 9.6 m @ 13.3 g/t AuEq (9.2 g/t Au, 2.6% Sb) from 204.4 m
  - MDDSC018: 1.8 m @ 9.5 g/t AuEq (8.2 g/t Au, 0.9% Sb) from 202.3 m
  - VCRD004: 3.0 m @ 5.5 g/t AuEq (5.2 g/t Au, 0.2% Sb) from 160.0 m
- *Christina*: drilling up to 470 m (and historic workings up to 750 m) west of the exploration target area, with drill results including:
  - o SDDSC086: 2.8 m @ 7.4 g/t AuEq (4.4 g/t Au, 1.9% Sb) from 252.7 m
  - SDDSC086: 3.1 m @ 21.3 g/t AuEq (20.6 g/t Au, 0.4% Sb) from 266.5 m.
  - SDDSC090: 9.8 m @ 4.6 g/t AuEq (4.0 g/t Au, 0.4% Sb) from 346.9 m
- Drilled regional targets (including Leviathan): located 3 km east from Apollo, with drill results including:
  - o SDDLV003: 0.5 m @ 15.7 g/t Au from 87.0 m
  - o SDDLV004: 0.3 m @ 5.6 g/t Au from 73.4 m and 0.3 m @ 19.4 g/t Au from 100.7 m
- **Undrilled regional areas:** Exploration at Sunday Creek has district-scale potential. There is an 11 km strike of multiple dyke-breccia-altered sediment mineralised trends extending beyond the initial target drill area, defined by historic workings and soil sampling.

# SUMMARY OF RELEVANT EXPLORATION DATA, METHODOLOGY, ASSUMPTIONS AND NEXT STEPS

The tonnage and grade are estimates based on continuity of mineralisation defined by exploration diamond drilling results (previously reported including relevant sections and plans) within proximity to the intrusive "main structure" zone and bleached sediments. Strike extents in the lower-case model are minimised to half drill spacing (~14m) or to locally restrictive geology (i.e. bounds of bleached sediment or dyke) whichever was smaller. The upper-case model strike extents were extended to the average vein strike (typically around



~40m) or to geological constraints, whichever was smaller.

The Exploration Target was limited to a vertical depth of 1,003 m below surface (-710m RL), limited by the deepest mineralisation defined to date within the "main structure" dyke/dyke breccia and bleached sediments within Rising Sun. Drilling indicates Rising Sun could contain higher gold and antimony grades than Apollo and Apollo Deeps.

A series of sub-vertical lodes within a 620 m-wide corridor has been outlined at Rising Sun and Apollo with mineralisation remaining open to the east, west and also to depth.

Only the Rising Sun and Apollo areas were considered for the Exploration Target as they contain sufficient drilling to suggest continuity and infer grade ranges. The Exploration Target is based on the interpretation of the following geology and mineralisation data that has been collated as of the date of this announcement:

- 116 structurally oriented drillholes for 45,971 m at the main Sunday Creek area that have been drilled by Mawson/SXG;
- 64 aircore, reverse circulation and unoriented diamond drill holes for 5,599 m that were drilled historically on the project;
- 26,513 drill hole assay results;
- 353 density measurements on mineralised diamond drill core, an SG of 2.75 g/cm<sup>3</sup> was applied to the Exploration Target.
- > surface geological mapping, costean data and diamond core geological logging;
- detailed LiDAR imagery;
- > geophysical datasets including detailed ground magnetic and 3D induced polarisation;
- > wireframing and modelling of the Apollo and Rising Sun mineralised body.

A total of 49 mineralised vein set shapes were created for the Exploration Target of which 42 were vein sets and 7 high-grade internal shapes (at Apollo, but not Rising Sun due to the lack of drill data) were defined. A total of 32 of the vein set shapes had grades estimated from composited assay data, while 17 vein set shapes used the average calculated grade of either Rising Sun (lower case 5.3 g/t Au and 1.4 % Sb and upper case 8.9 g/t Au and 1.5% Sb) or Apollo (lower and upper case 4.0 g/t Au, 0.6% Sb) and this was applied to the exploration target. Drilling indicates Rising Sun could contain higher gold and antimony grades than Apollo and Apollo Deep.

Mineralisation across all vein sets was limited by the deepest mineralisation defined to date, within the "main structure" dyke/dyke breccia and bleached sediments within Rising Sun approximately 1,000 m below surface. While at Apollo the Exploration Target extended from surface to where drill density decreases 650 m below surface.

Below drilling intercepts to the lower estimation limit, the low tonnage range used a minimum width of 1.5 m (75% of average estimated true width of domains) while the high tonnage range applied a minimum width of 2 m (average true width of domains). Strike extents in the low tonnage range model were minimised to half drill spacing (~14 m) or to locally restrictive geology (i.e. bounds of altered sediment (ASED) or dyke) whichever was smaller. The high tonnage range model applied strike extents that were extended to the average vein strike (typically around ~40m) or to geological constraints, whichever was smaller.

Wireframes have been created in Leapfrog Geo using a threshold of 1 g/t Au over 2m. The economic composite tool was used to allow for the inclusion of thin, high-grade intercepts. Grade ranges have been informed by a preliminary grade estimate conducted on top-cut, composited data using Leapfrog Edge. The high- and low-grade ranges are primarily driven by differences in top cuts applied to the Rising Sun estimate. The low-end grade range used a top cut of 24 g/t Au while the upper grade range used a top cut of 67 g/t Au. The change in top cuts reflects the exclusion or inclusion respectively of a higher-grade population



present across multiple veins that may be sub-domained and estimated separately as additional drilling is conducted.

For the high-range domains Rising Sun (versus Apollo) contributes 64% of the tonnes and 80% of the contained ounces. Significant upside also remains within the tenor potential of Rising Sun when further high-grade domains can be recognized and separated to maintain the high-grade nature of the veins ie no top cuts need be applied.

Notably the Exploration Target is constrained to the two main areas along the strike of the dyke breccia host on the project: Rising Sun (over 340 m strike) and Apollo (over 280 m strike) for a total **620 m** of strike. This strike represents about 50% strike of the 1.2 km main drill footprint to date at Sunday Creek.

#### TOWARDS A MINERAL RESOURCE ESTIMATE

The proposed exploration activities designed to test the validity of the Exploration Target and to move from an Exploration Target to a Mineral Resource Estimate will comprise the following activities.

#### Native Title Heritage Surveys

Heritage surveys required to gain access to the Exploration Target area have been completed in conjunction with the Taungurung Land and Waters Council who represent the Native Title holders the Taungurung People.

#### **Cultural Heritage Clearances**

Heritage walk overs required to gain access to the Exploration Target area have been completed in conjunction with the Taungurung Land and Waters Council who represent the Native Title holders the Taungurung People.

#### Approvals

The majority of the Exploration Target is contained within a small crown land allotment. Southern Cross Gold owns 132.64 hectares that fully encloses the crown land. Approvals required for exploration drilling to test the Exploration Target, have all been obtained on all the crown land and on the freehold land, except within 200 m of the Sunday Creek near the Christina area. Drill access to these areas is now required to test at depth to the west of Golden Dyke and approvals to access these areas are expected in Q1 2024.

#### **Exploration Licences**

The vast majority of the Exploration Target is located within granted Retention Licence RL6040 and surrounded by granted EL6163. No further Exploration Licences are required to be granted to test the Exploration Target.

#### Exploration Program

Expansion and resource definition drilling is continuing at the project with four diamond rigs operating to continue to extend mineralisation drill-out within the Exploration Target and to upgrade the mineralisation to Mineral Resource status. It is expected that these activities will be completed during the second half of 2024.

#### Metallurgical test work

Southern Cross Gold has completed initial metallurgical test work on two drill holes from the Exploration Target area which were reported on <u>10 January 2024</u>. Mineralogical investigations demonstrated a high proportion of non-refractory native gold (82% - 84%). Additionally, gravity and bulk flotation resulted in 93.3% - 97.6% recovery of gold. Flotation gave 88.9% - 95.0% recovery of gold across two products:

1. An antimony concentrate, grading 32% - 52% Sb (87.1% - 93.8% recovery), 81.4 g/t – 313.6 g/t Au (40% of feed gold) with low to moderate arsenic contents (0.4% and 2.58%). It was estimated that 96% - 98% of the contained gold was native gold and;



2. A sulphide concentrate containing 65.7 g/t – 159.0 g/t Au (49% - 55% of feed gold) with higher arsenic contents (5.7% and 12.1%). Critically 79% - 82% of the contained gold was native gold indicating the opportunity for ease of gold separation.

#### Mineral Resource Estimate

SRK Consulting (Australasia) Pty Ltd ("SRK") have been engaged to for ongoing modelling assistance and the eventual preparation of a Mineral Resource Estimate, consistent with the requirements of the 2012 edition of the JORC Code.

#### ABOUT SUNDAY CREEK

The Sunday Creek epizonal-style gold project is located 60 km north of Melbourne within 19,365 hectares of granted exploration tenements.

#### History

The Sunday Creek deposit is a high level orogenic (or epizonal) deposit. Small scale mining has been undertaken in the project area since the 1880s continuing through to the early 1900s. Historical production occurred with multiple small shafts and alluvial workings across the existing permits. Past production at the Sunday Creek prospect is reported as 41,000 oz gold at a grade of 33 g/t gold. Larger historic workings along the trend from west to east include Christina, Golden Dyke, Rising Sun and Apollo.

#### **Regional Geology**

Sunday Creek occurs with the Melbourne Zone of the Lachlan Geosyncline, in sequences folded and thrustfaulted by the Late Devonian Tabberabberan Orogeny. The regional host to the Sunday Creek mineralisation is an interbedded turbidite sequence of siltstones, mudstones, and minor sandstones, metamorphosed to sub-greenschist facies and folded into a set of open north-west trending synclines and anticlines.

#### **Structural Setting and Local Geology**

Intruded into the sedimentary sequence is a series of intermediate monzodiorite – diorite dykes and breccias on an east-west trend. The Sunday Creek dykes have highly variable textures and compositions with the earliest emplaced aphanitic varieties emplaced along thin fracture sets. These fine-grained dykes locally grade into porphyritic to massive varieties as the thickness of the dykes increases and brecciate in areas of complexity or in proximity to fold hinges.

Large scale thrusts sub-parallel to the NW trending structural grain, dislocate the dyke system and an array of sub-vertical extension veins form subparallel to the bedding trend and orthogonal to the intruded dyke sequence. Veining is focused within areas of high competency contrast, such as the intruded dyke and surrounding alteration, fold hinges and areas of structural complexity.

#### Alteration

Distally a regional chlorite alteration weakly pervades the sediments, with a change in mica composition from phengitic to muscovitic mica approaching mineralisation, an increase in carbonate spotting and cementation and proximal to the dyke a very intense texturally destructive alteration of sericite-carbonate-silica "bleaching" of the sediments.

#### **Mineralisation & Structural Setting**

Geological controls on mineralisation (structural, chemical, stratigraphic) exist on every ore deposit and Sunday Creek is no different. Mineralisation is structurally controlled, with increased mineralisation associated within the "bleaching" around the intrusive sequence. Early alteration and sulphide (pyrite) mineralisation has exploited the vesicular/amygdaloidal nature of the pervasively altered/mineralised dyke and the brecciated areas, or forms east-west trending pyrite veinlets.



Gold-antimony mineralisation is dominantly hosted within zones of sub-vertical, brittle-ductile NW striking shear veins and associated veins, containing visible gold, quartz, stibnite, occasional fibrous sulphosalts and minor ferroan carbonates infill. The veins have an associated selvedge of disseminated sulphides in the form of arsenian pyrite, pyrite and arsenopyrite. The mineralised zones crosscut the bleached sediments and altered dyke (the "host") on a north-westerly orientation and the zones are typically between 5-30m wide, 20-100m in strike and currently defined vertically down to 1km depth. Each of these zones repeats every 10-20m within the Apollo and Rising Sun areas with 42 vein sets currently defined to date.

When observed from above, the host resembles the side rails of a ladder, where the sub-vertical mineralised vein sets are the rungs, many of which extend from surface to depth.

#### FURTHER INFORMATION

Further discussion and analysis of the Sunday Creek project is available through the interactive Vrify 3D animations, presentations and videos all available on the SXG website. These data, along with an interview on these results with Managing Director Michael Hudson, with a 3D Leapfrog presentation, can be viewed at www.southerncrossgold.com.au

Figures 1-4 show longitudinal and plan views of Exploration Target reported here, as well as project location, plans.

- Ends -

This announcement has been approved for release by the Board of Southern Cross Gold Ltd.

#### **Competent Person Statement**

Information in this report that relates to the Exploration Target for the Sunday Creek Project is based on information compiled by Mr Kenneth Bush and Mr Michael Hudson. Mr Bush is a Member of Australian Institute of Geoscientists and Mr Hudson is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Bush and Mr Hudson each have sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bush is Exploration Manager and Mr Hudson is Managing Director of Southern Cross Gold Limited and both consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

Information in this announcement that relates to exploration results contained in this report is based on information compiled by Mr. Michael Hudson, a Fellow of the Australasian Institute of Mining and Metallurgy. He is the Managing Director of Southern Cross Gold Ltd. He has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity being 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 (the JORC Code). Michael Hudson has consented to the inclusion in this report of the matters based on this information in the form and context in which it appears. Mr Hudson assumes responsibility for matters related to Sections 1 and 2 of the JORC Table 1.

Certain information in this announcement that relates to prior exploration results is extracted from the Independent Geologist's Report dated 16 March 2022 which was issued with the consent of the Competent Person, Mr Terry C. Lees. The report is included the Company's prospectus dated 17 March 2022 which was released as an announcement to ASX on 12 May 2022 and is available at www2.asx.com.au under code "SXG". The Company confirms that it is not aware of any new information or data that materially affects the information related to exploration results included in the original market announcement. The Company confirms that the form and context of the Competent Persons' findings in relation to the report have not been materially modified from the original market announcement.

Certain information in this announcement also relates to prior drill hole exploration results, are extracted from previously reported announcements, which are available to view on <u>www.southerncrossgold.com.au</u>.



The Company confirms that it is not aware of any new information or data that materially affects the information included in the original document/announcement and the Company confirms that the form and context in which the Competent Person's findings are presented have not materially modified from the original market announcement.

#### **Gold Equivalent Calculation**

SXG considers that both gold and antimony that are included in the gold equivalent calculation ("AuEq") have reasonable potential to be recovered at Sunday Creek, given current geochemical understanding, historic production statistics and geologically analogous mining operations. Historically, ore from Sunday Creek was treated onsite or shipped to the Costerfield mine, located 54 km to the northwest of the project, for processing during WW1. The Costerfield mine corridor, now owned by Mandalay Resources Ltd contains two million ounces of equivalent gold (Mandalay Q3 2021 Results), and in 2020 was the sixth highest-grade global underground mine and a top 5 global producer of antimony.

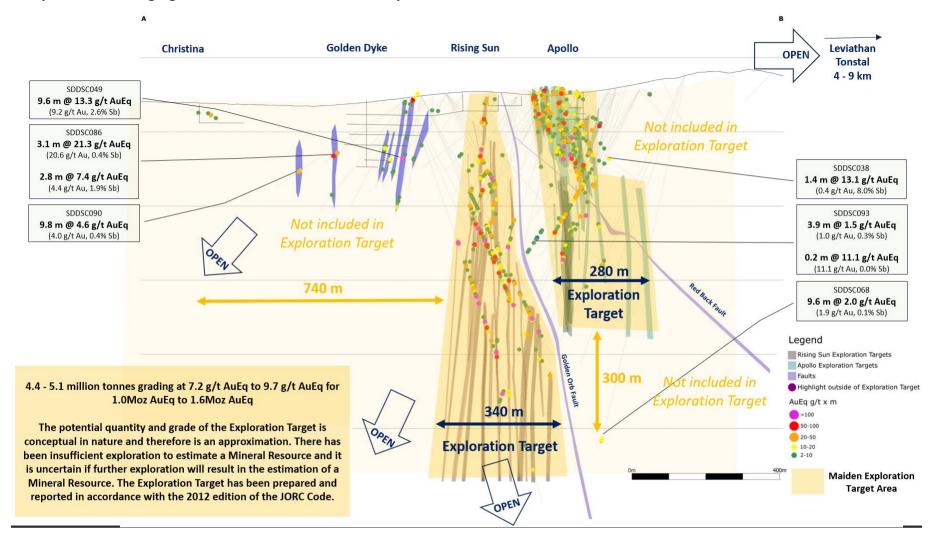
SXG considers that it is appropriate to adopt the same gold equivalent variables as Mandalay Resources Ltd in its Mandalay Technical Report, 2022 dated 25 March 2022. The gold equivalence formula used by Mandalay Resources was calculated using recoveries achieved at the Costerfield Property Brunswick Processing Plant during 2020, using a gold price of US\$1,700 per ounce, an antimony price of US\$8,500 per tonne and 2021 total year metal recoveries of 93% for gold and 95% for antimony, and is as follows:

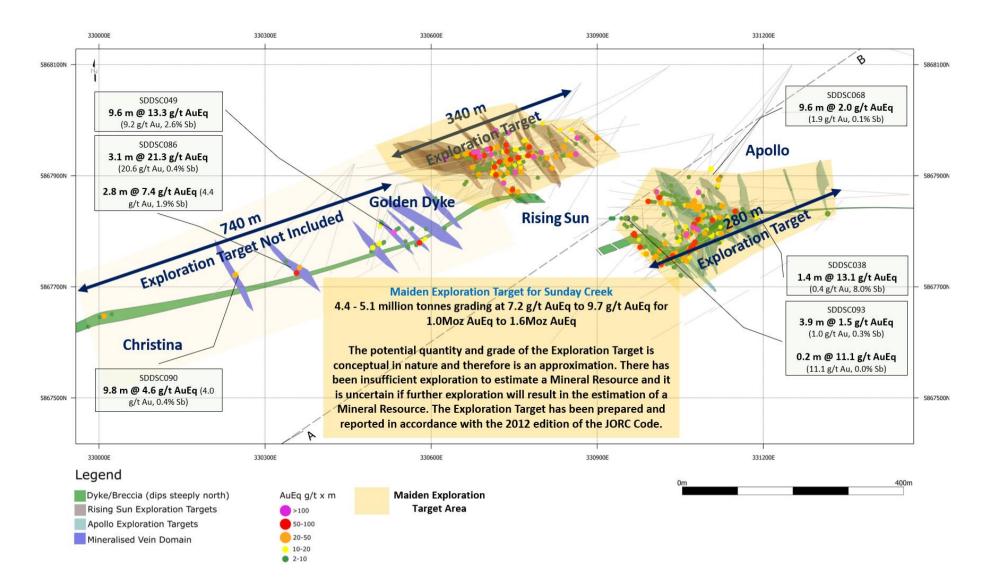
#### $AuEq = Au (g/t) + 1.58 \times Sb (\%).$

Based on the latest Costerfield calculation and given the similar geological styles and historic toll treatment of Sunday Creek mineralisation at Costerfield, SXG considers that a  $AuEq = Au (g/t) + 1.58 \times Sb$  (%) is appropriate to use for the initial exploration targeting of gold-antimony mineralisation at Sunday Creek.

#### For further information, please contact:

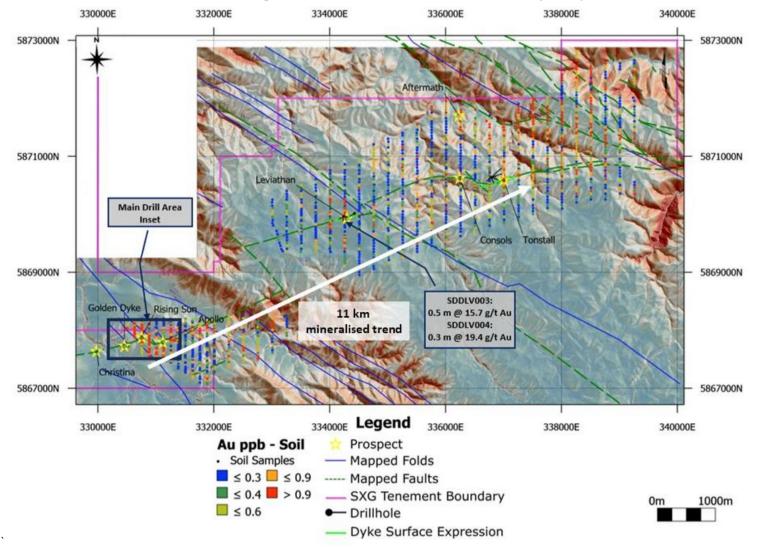
Justin Mouchacca, Company Secretary, <u>im@southerncrossgold.com.au</u>, +61 3 8630 3321 Nicholas Mead, Corporate Development, <u>nm@southerncrossgold.com.au</u>, +61 415 153 122 Figure 1: Sunday Creek Longitudinal Section showing 49 total vein shapes created for the Exploration Target (dark yellow, blue outline). Notably the Exploration Target is constrained to the two main areas along the strike of the dyke breccia host on the project: Rising Sun (over 340 m strike) and Apollo (over 280 m strike) for a total 620 m of strike. This strike represents only 50% strike (light yellow) of the 1.2 km main drill footprint to date at Sunday Creek where high-grade drill intersections have already been made.





#### Figure 2: Creek plan view showing area of interest for Exploration Target (dark yellow)

Figure 3: Sunday Creek regional plan view showing LiDAR, soil sampling, structural framework, regional historic epizonal gold mining areas and broad regional areas (Tonstal, Consols and Leviathan) tested by 12 holes for 2,383 m drill program. The regional drill areas are at Tonstal, Consols and Leviathan located 4,000-7,500 m along strike from the main drill area at Golden Dyke- Apollo.



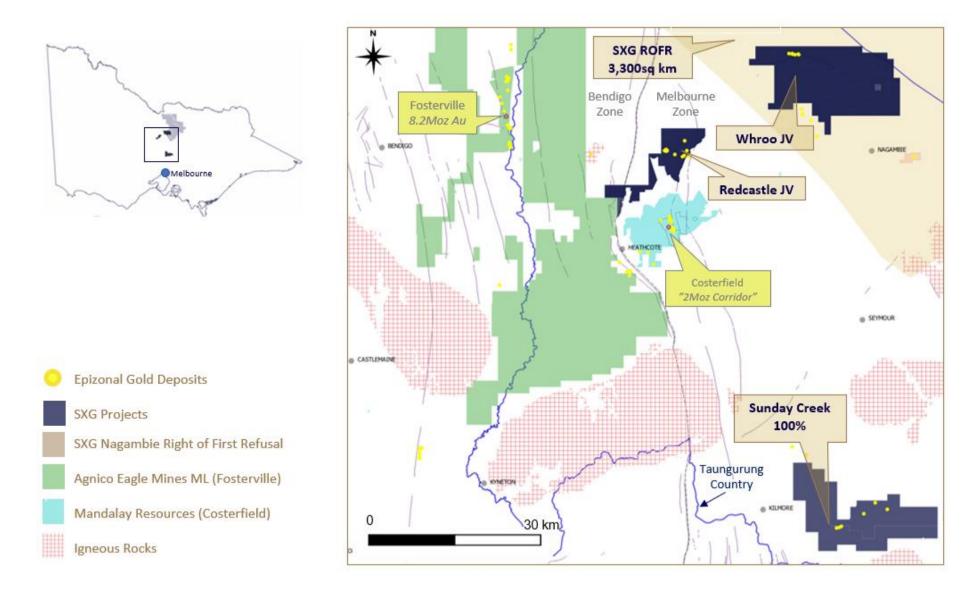


Figure 4: Location of the Sunday Creek project, along with SXG's other Victoria projects and simplified geology.

## **JORC Table 1**

## **Section 1 Sampling Techniques and Data**

| Criteria                 | JC | DRC Code explanation  | С | ommentary  |
|--------------------------|----|---|---|--|
| Sampling<br>techniques   | •  | Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.<br>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.<br>Aspects of the determination of mineralisation that are Material to the Public Report.<br>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. | • | Sampling has been conducted on drill core (half core for >90% and quarter core for check samples), grab samples (field samples of in-situ bedrock and boulders; including duplicate samples), trench samples (rock chips, including duplicates) and soil samples were obtained by using a GPS, generally to an accuracy of within 5 metres. Drill hole and trench locations have been confirmed to <1 metre using a differential GPS.<br>Samples locations have also been verified by plotting locations on the high-resolution Lidar maps<br>Drill core is marked for cutting and cut using an automated diamond saw used by Company staff in Kilmore.<br>Samples are bagged at the core saw and transported to the Bendigo OnSite Laboratory for assay.<br>At OnSite samples are crushed using a jaw crusher combined with a rotary splitter and a 1 kg split is separated for pulverizing (LM5) and assay.<br>Standard fire assay techniques are used for gold assay on a 30 g charge by experienced staff (used to dealing with high sulphide and stibnite-rich charges).<br>OnSite gold method by fire assay code PE01S.<br>Screen fire assay is used to understand gold grain-size distribution where coarse gold is evident.<br>ICP-OES is used to analyse the aqua regia digested pulp for an additional 12 elements (method BM011) and over-range antimony is measured using flame AAS (method known as B050).<br>Soil samples were sieved in the field and an 80 mesh sample bagged and transported to ALS Global laboratories in Brisbane for super-low level gold analysis on a 50 g samples are generally submitted to OnSite Laboratories for standard fire assay and 12 element ICP-OES as described above. |
| Drilling<br>techniques   | •  | Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).   | • | HQ diameter diamond drill core, oriented using Boart Longyear TruCore orientation tool with the orientation line marked on the base of the drill core by the driller/offsider.<br>A standard 3 metre core barrel has been found to be most effective in both the hard and soft rocks in the project.   |
| Drill sample<br>recovery | •  | Method of recording and assessing core and chip sample recoveries and results assessed.   | • | Core recoveries were maximised using HQ diamond drill core with careful control over water pressure to maintain soft-rock integrity and prevent loss of fines from soft drill core. Recoveries are determined on a metre-by-metre basis  |

| Criteria  | JORC Code explanation   | Commentary   |
|---|---|--|
|   | <ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <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><li>against driller's core blocks.</li><li>Plots of grade versus recovery and RQD (described below) show no trends</li></ul>   |
| Logging   | <ul> <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> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>            | core shed.<br>Core orientations marked at the drill rig are checked for consistency, and base  |
| Sub-sampling<br>techniques<br>and sample<br>preparation | <ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul> | <ul> <li>Drill core is typically sampled using half of the HD diameter. The drill core orientation line is retained.</li> <li>Quarter core is used when taking sampling duplicates (termed FDUP in the database).</li> <li>Sampling representivity is maximised by always taking the same side of the</li> </ul> |

| Criteria  | JORC Code explanation  | Commentary  |
|---|--|---|
|   | <ul> <li>Measures taken to ensure that the sampling is representative of the in sit material collected, including for instance results for field duplicate/second-ha sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>   | If quarter core and half core splits (laboratory duplicates) allows an estimation of nugget effect.   |
| Quality of<br>assay data<br>and laboratory<br>tests | <ul> <li>The nature, quality and appropriateness of the assaying and laborator, procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, th parameters used in determining the analysis including instrument make an model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates external laboratory checks) and whether acceptable levels of accuracy (ie lac of bias) and precision have been established.</li> </ul> | <ul> <li>The fire assay technique for gold used by OnSite is a globally recognised method, and over-range follow-ups including gravimetric finish and screen fire assay are standard. Of significance at the OnSite laboratory is the presence of fire assay personnel who are experienced in dealing with high sulphide charges (especially those with high stibnite contents) – this substantially reduces the risk of in accurate reporting in complex sulphide-gold charges.</li> </ul> |

| Criteria                                    | JORC Code explanation  | Commentary   |
|---|--|--|
|   |  | <ul> <li>Laboratory CRMs – OnSite regularly inserts their own CRM materials into the process flow and reports all data</li> <li>Laboratory precision – duplicate measurements of solutions (both Au from fire assay and other elements from the aqua regia digests) are made regularly by the laboratory and reported.</li> <li>Accuracy and precision have been determined carefully by using the sampling and measurement techniques described above during the sampling (accuracy) and laboratory (accuracy and precision) stages of the analysis.</li> <li>Soil sample company duplicates and laboratory certified reference materials all fall within expected ranges.</li> </ul> |
| Verification of<br>sampling and<br>assaying | <ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>                            | <ul> <li>sites and inspected drill core held at the Kilmore core shed on 01/08/23.</li> <li>Visual inspection of drill intersections matches both the geological descriptions</li> </ul>   |
| Location of<br>data points                  | <ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Minera Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>   | Differential GPS used to locate drill collars, trenches and some workings  |
| Data spacing<br>and<br>distribution         | <ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree<br/>of geological and grade continuity appropriate for the Mineral Resource and<br/>Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul> | • The data spacing is suitable for reporting of exploration results – evidence for this is based on the improving predictability of high grade gold-antimony   |

| Criteria   | JORC Code explanation  | Commentary  |
|--|--|---|
| Orientation of<br>data in relation<br>to geological<br>structure | <ul> <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> <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> | approximately 60-70% of the sampled thickness.  |
| Sample<br>security   | The measures taken to ensure sample security.  | <ul> <li>Drill core is delivered to the Kilmore core logging shed by either the drill<br/>contractor or company field staff. Samples are marked up and cut by company<br/>staff at the Kilmore core shed, in an automated diamond saw and bagged<br/>before loaded onto strapped secured pallets and trucked by commercial<br/>transport to Bendigo for submission to the laboratory. There is no evidence in<br/>any stage of the process, or in the data for any sample security issues.</li> </ul> |
| Audits or<br>reviews   | The results of any audits or reviews of sampling techniques and data.  | <ul> <li>Continuous monitoring of CRM results, blanks and duplicates is undertaken by<br/>geologists and the company data geologist. Mr Michael Hudson for SXG has<br/>the orientation, logging and assay data.</li> </ul>  |

# Section 2 Reporting of Exploration Results

| Criteria  | JORC Code explanation  | Commentary   |
|---|--|--|
| Mineral<br>tenement<br>and land<br>tenure<br>status | <ul> <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> <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> | • The Sunday Creek Goldfield, containing the Clonbinane Project, is covered by the Retention Licence RL 6040 and is surrounded by Exploration Licence EL6163 and Exploration Licence EL7232. All the licences are 100% held by Clonbinane Goldfield Pty Ltd, a wholly owned subsidiary company of Southern Cross Gold Ltd.   |
| Exploration<br>done by<br>other parties             | Acknowledgment and appraisal of exploration by other parties.  | <ul> <li>The main historical prospect within the Sunday Creek project is the Clonbinane prospect, a high level orogenic (or epizonal) Fosterville-style deposit. Small scale mining has been undertaken in the project area since the 1880s continuing through to the early 1900s. Historical production occurred with multiple small shafts and alluvial workings across the Clonbinane Goldfield permits. Production of note occurred at the Clonbinane area with total production being reported as 41,000 oz gold at a grade of 33 g/t gold (Leggo and Holdsworth, 2013)</li> <li>Work in and nearby to the Sunday Creek Project area by previous explorers typically focused on finding bulk, shallow deposits. Beadell Resources were the first to drill deeper targets and Southern Cross have continued their work in the Sunday Creek Project area.</li> <li>EL54 - Eastern Prospectors Pty Ltd Rock chip sampling down the Christina mine shaft. Resistivity survey over the Golden Dyke. Five diamond drill holes around Christina, two of which have assays.</li> <li>ELs 872 &amp; 975 - CRA Exploration Pty Ltd Exploration focused on finding low grade, high tonnage deposits. The tenements were relinquished after the area was found to be prospective but not economic.</li> <li>Stream sediment samples around the Golden Dyke and Reedy Creek areas. Results were better around the Golden Dyke. 45 dump samples around Golden Dyke old workings showed good correlation between gold, arsenic and antimony. Soil samples over the Golden Dyke to define boundaries of dyke and mineralisation. Two costeans parallel to the Golden Dyke targeting soil anomalies. Costeans since rehabilitated by SXG.</li> <li>ELs 827 &amp; 1520 - BHP Minerals Ltd Exploration targeting open cut gold mineralisation peripheral to SXG tenements.</li> <li>ELs 1534, 1603 &amp; 3129 - Ausminde Holdings Pty Ltd</li> </ul> |

| Criteria                       | JORC Code explanation   | Commentary   |
|--------------------------------|---|--|
| Geology                        | Deposit type, geological setting and style of   | <ul> <li>Targeting shallow, low grade gold. Trenching around the Golden Dyke prospect and results interpreted along with CRAs costeans. 29 RC/Aircore holes totalling 959 m sunk into the Apollo, Rising Sun and Golden Dyke target areas.</li> <li>ELs 4460 &amp; 4987 - Beadell Resources Ltd</li> <li>ELs 4460 and 4497 were granted to Beadell Resources in November 2007. Beadell successfully drilled 30 RC holes, including second diamond tail holes in the Golden Dyke/Apollo target areas.</li> <li>Both tenements were 100% acquired by Auminco Goldfields Pty Ltd in late 2012 and combined into one tenement EL4987.</li> <li>Nagambie Resources Ltd purchased Auminco Goldfields in July 2014. EL4987 expired late 2015, during which time Nagambie Resources applied for a retention licence (RL6040) covering three square kilometres over the Sunday Creek Goldfield. RL6040 was granted July 2017.</li> <li>Clonbinane Gold Field Pty Ltd was purchased by Mawson Gold Ltd in February 2020. Mawson drilled 30 holes for 6,928 m and made the first discoveries to depth. SXG was spun out of Mawson onto the ASX on May 16, 2022.</li> <li>Refer to the description in the main body of the release.</li> </ul> |
| Drillhole<br>Information       | <ul> <li>mineralisation.</li> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following</li> <li>information for all Material drill holes:         <ul> <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> </ul> </li> <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> | Refer to appendices  |
| Data<br>aggregation<br>methods | <ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <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> <li>See "Further Information" and "Metal Equivalent Calculation" in main text<br/>of press release.</li> </ul>  |

| Criteria  | JORC Code explanation   |   |  |   | Commentary   |  |   |   |   |  |
|---|---|---|--|---|--|--|---|---|---|--|
|   |   | nptions used for any reporting of m<br>clearly stated.  | etal equivalent values   |   |  |  |   |   |   |  |
| Relationship<br>between<br>mineralisation<br>widths and<br>intercept<br>lengths | Exploration<br>If the geom<br>known, its r<br>If it is not<br>should be a | ationships are particularly importan<br>Results.<br>etry of the mineralisation with respect<br>nature should be reported.<br>known and only the down hole leng<br>a clear statement to this effect (eg. 'do<br>width not known'). | to the drill hole angle is<br>ths are reported, there                      | See re  | porting of tru   | ue widths in t   | the body of the p   | oress release   |   |  |
| Diagrams  | should be i<br>should incl  | e maps and sections (with scales) and a<br>included for any significant discovery<br>ude, but not be limited to a plan v<br>nd appropriate sectional views.   | being reported These   |   | esults of the ncement.   | diamond di   | rilling are displa  | yed in the fi   | gures in the  |  |
| Balanced<br>reporting   | practicable,  | mprehensive reporting of all Explo<br>representative reporting of both low<br>uld be practiced to avoid misleading r  | and high grades and/or   | The re  | sults are cor  | nsidered rep   | ve been tabulate<br>resentative with<br>sclosed in tabula | no intended   | bias.   |  |
| Other<br>substantive<br>exploration<br>data                                     | including (b<br>results; geo<br>treatment;<br>geotechnica                 | pration data, if meaningful and mater<br>out not limited to): geological observation<br>ochemical survey results; bulk sample<br>metallurgical test results; bulk<br>al and rock characteristics; pot<br>ing substances.          | ons; geophysical survey<br>s – size and method of<br>density, groundwater, | <ul> <li>cross s</li> <li>Composition</li> <li>Preliming</li> <li>Viability</li> <li>The primetally</li> <li>gravity</li> <li>NSW.</li> <li>Engines</li> <li>initial s</li> <li>Creek</li> <li>Two que (Table)</li> </ul> | sections and<br>etent Person<br>inary testing<br>y of recoveri-<br>ustry standar<br>ogram was o<br>urgical testin<br>and commin<br>The program<br>eering & Mar<br>sighter flotati-<br>deposit.<br>uarter core in<br>1). A split of | long sectior<br>'s statement<br>(AMML Rep<br>ng gold and<br>d processing<br>completed by<br>g laboratory<br>nution testwo<br>n was supern<br>agement, w<br>on testing of<br>htercepts we<br>each was s | oort 1801-1) has<br>antimony values                       | d in the text a<br>demonstrate<br>to high valu<br>ablished mine<br>otation, hydr<br>g facilities in<br>rown of Reso<br>d to develop p<br>rilling of the s<br>netallurgical f<br>ay analysis T | ind in the<br>d the<br>e products<br>eral and<br>ometallurgy,<br>Gosford,<br>purces<br>plans for<br>Sunday<br>eest work |  |
|   |   |   |  | Apollo  | AP01   | 22.8<br>16.6   | MDDSC021<br>SDDSC031                                      | 275.9<br>220.4  | 289.3<br>229.9  |  |

| Criteria     | JORC Code explanation  | Commentary   |
|--------------|--|--|
|              |  | The metallurgical characterisation test work included:   |
|              |  | <ul> <li>Diagnostic LeachWELL testing.</li> <li>Gravity recovery by Knelson concentrator and hand panning.</li> <li>Timed flotation of combined gravity tails.</li> <li>Rougher-Cleaner flotation (without gravity separation), with sizing of products, to produce samples for mineralogical investigation.</li> <li>Mineral elemental concentrations and gold deportment was investigated using Laser Ablation examination by University of Tasmania.</li> <li>QXRD Mineralogical assessment were used to estimate mineral contents for the test products, and, from this, to assess performance in terms of minerals as well as elements, including contributions to gold deportment. For both test samples, observations and calculations indicated a high proportion of native ('free') gold: 84.0% in RS01 and 82.1% in AP01.</li> <li>Samples of size fractions of the three sulphide and gold containing flotation products from the Rougher-Cleaner test series were sent to MODA Microscopy for optical mineralogical assessment. Key observations were:         <ul> <li>The highest gold grade samples from each test series found multiple grains of visible gold which were generally liberated, with minor association with stibnite (antimony sulphide).</li> <li>Stibnite was highly liberated and was very 'clean' – 71.7% Sb, 28.3% S.</li> <li>Arsenopyrite was also highly liberated indicating potential for separation.</li> </ul> </li></ul> |
|              |  | <ul> <li>Pyrite was largely free but exhibited some association with gangue minerals.</li> </ul>   |
| Further work | <ul> <li>The nature and scale of planned further work (eg. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <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> |  |