

## ASX ANNOUNCEMENT

5 October 2021

# 17m @ 7 g/t including 1m @ 109 g/t Gold Discovered 200m South of Southern Star

### Highlights

- Discovery of exceptionally high-grade gold 200m south of the previous known extent of gold mineralisation at Southern Star:
  - **17m @ 7.0 g/t Au** from 111m incl. **2m @ 56.7g/t Au** incl. **1m @ 109.0 g/t Au** in 21SSRC0039
- High-grade extension is positioned on a look-alike magnetic high feature also found at Southern Star.
- The mineralised position is now extended to 700m of strike length at Southern Star.
- GSN has a further 12km of strike length of this same trend to explore. This is the same trend that hosts other substantial gold deposits at Rosemount and Ben Hur.
- Further results from Southern Star are anticipated very shortly.

### GSN's Chief Executive Officer, Sean Gregory, commented:

*"Discovering exceptional high-grade gold in an area that has seen no drilling previously, 200m south of Southern Star is an exciting development for Great Southern. It demonstrates that the 12km strike of this well understood mineralised trend is likely to hold more ounces on GSN tenure, we now just have to find out how many more. In terms of mineralisation style, Southern Star is the same as Ben Hur and Rosemount which have progressively grown into company making deposits, and we see no reason for this not to also occur at Southern Star."*

## Introduction

Great Southern Mining Limited (ASX: GSN) (“**GSN**” or the “**Company**”) is pleased to announce results from its extensional Reverse Circulation (RC) drill program adjacent to the Southern Star Gold Deposit at its 100% owned Duketon Gold Project located 45km north of Laverton, Western Australia (Figure 1).

Following on from a highly successful maiden 3,421m RC drill program at Southern Star, GSN decided to extend the program whilst the drill rig was still available. A nine hole, 1,142m drill program was completed focusing on areas of Southern Star that required follow up drilling based on the new results. Three existing holes were also so re-entered and extended for an additional 93m. Results relating to in this announcement consist of four holes drilled in the southern discovery zone for 563m.

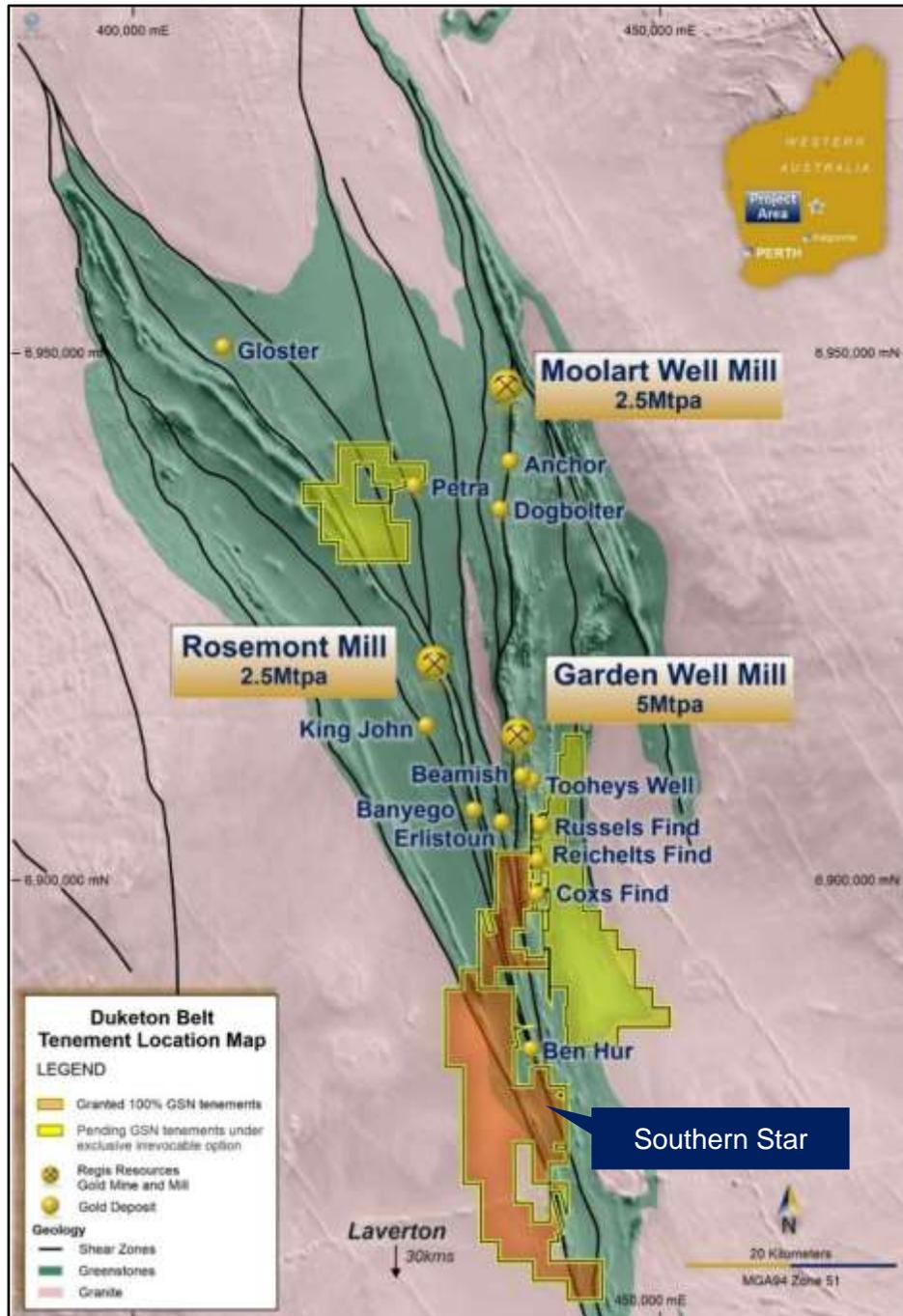


Figure 1 - Plan view highlighting GSN's large tenement and Southern Star location

## Extensional Mineralisation Discovered

Gold mineralisation has been discovered 200m south-east along strike from the Southern Star deposit in drillhole 21SSRC0039 with an outstanding intersection of **17m @ 7.0 g/t Au** from 111m including **2m @ 56.7g/t Au** including **1m @ 109.0 g/t Au** (Figure 3). The new gold mineralisation was intersected at the footwall of the quartz dolerite unit as this is where the primary lode is persistent and of high-grade. The high-grade mineralisation has been extended and can now be traced for over 700m of strike length and is open in all directions (Figure 2 and Figure 4).

The new intersection in 21SSRC0039 is regarded as a significant development as the high-grade extension is positioned on a “look alike” magnetic high feature that is also found at Southern Star. The magnetic high is dislocated which is interpreted to represent alteration assemblages or a possible cross cutting structure which is indicative of shear hosted gold deposits (Figure 2).

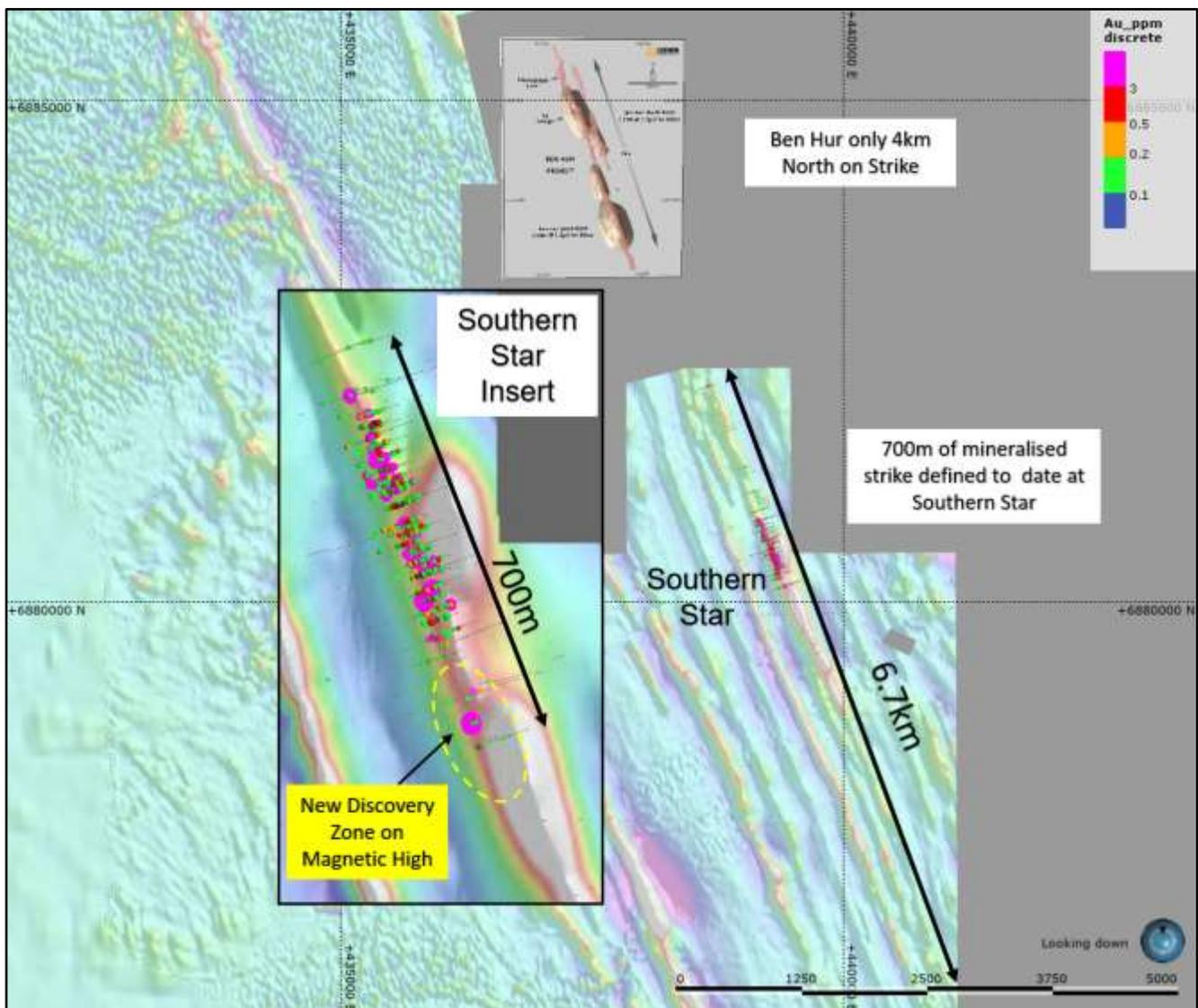


Figure 2 - Southern Star insert highlighting maximum gold downhole with draped magnetic data (TMI1vd) highlighting the regional 345° trending stratigraphy that host both Ben Hur and Southern Star deposits.

Drilling at the new discovery zone to date only consists of four new drillholes, another significant intercept from the recent campaign of **39m @ 0.4 g/t Au** from 116m including **1m @ 3.6 g/t Au** in SS21RC0023 was encountered. This wide intercept demonstrates that mineralisation is not constrained to the outstanding intersection of **17m @ 7.0 g/t Au** from 111m in drillhole SS21RC0039 and the likelihood of the mineralisation to be part of a larger gold system is apparent.

GSN tenure includes 6.7km of strike extent of this mineralised trend on E38/3501 (Figure 2) and 5.6km of strike extent on E38/3818 for a total of 12.3km of strike length. GSN has only explored a small fraction of this mineralised trend to date, drilling to the south of the new discovery zone is virtually nonexistent and the quartz dolerite unit has not been targeted. GSN are highly encouraged by the recent developments.

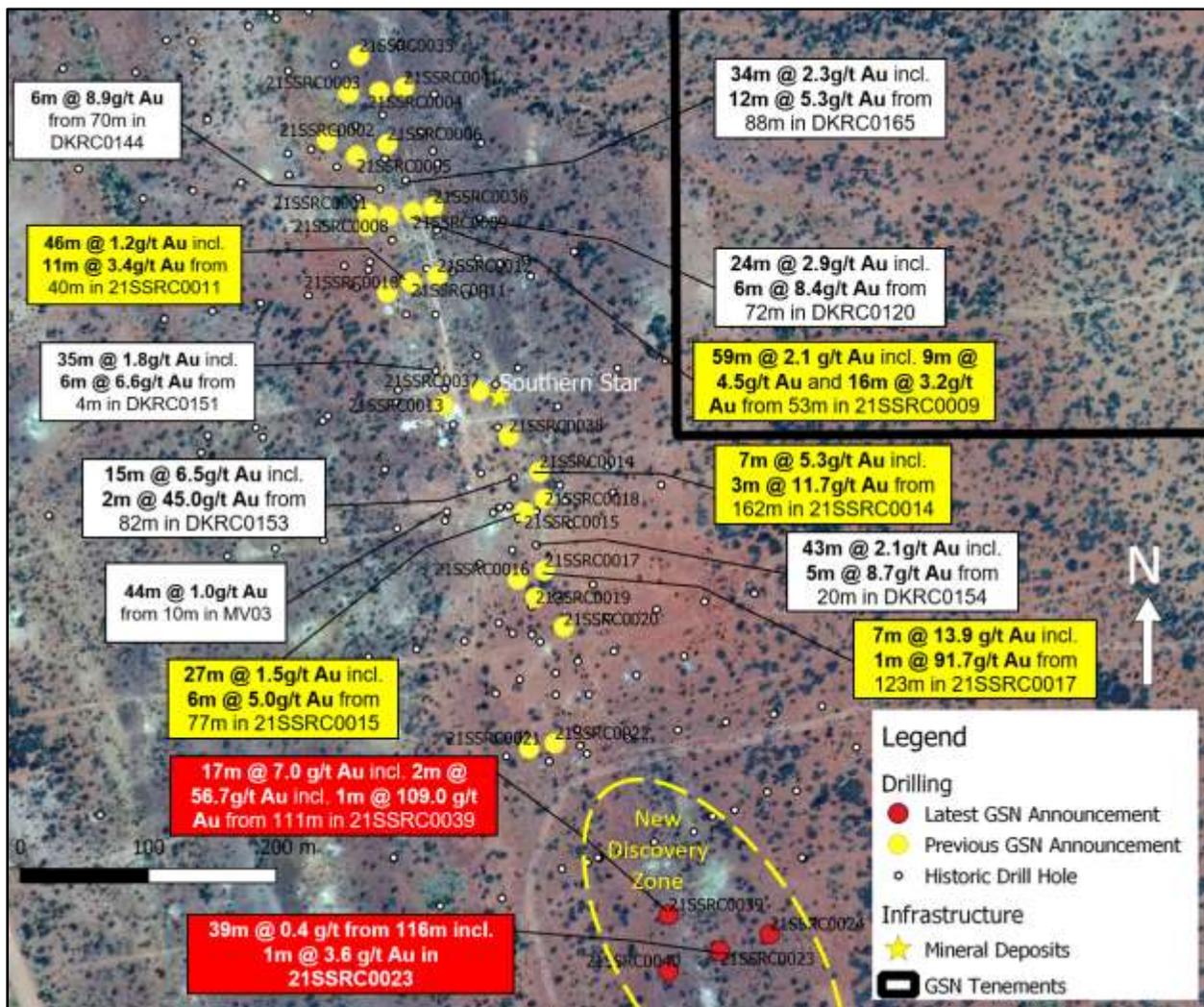


Figure 3 – Plan view of drilling results at Southern Star. Only intercepts greater than 40-gram metres are labelled outside discovery zone. Refer to ASX announcements 2/2/21, 2/8/21, and 23/8/21.

### Southern Star Long Section

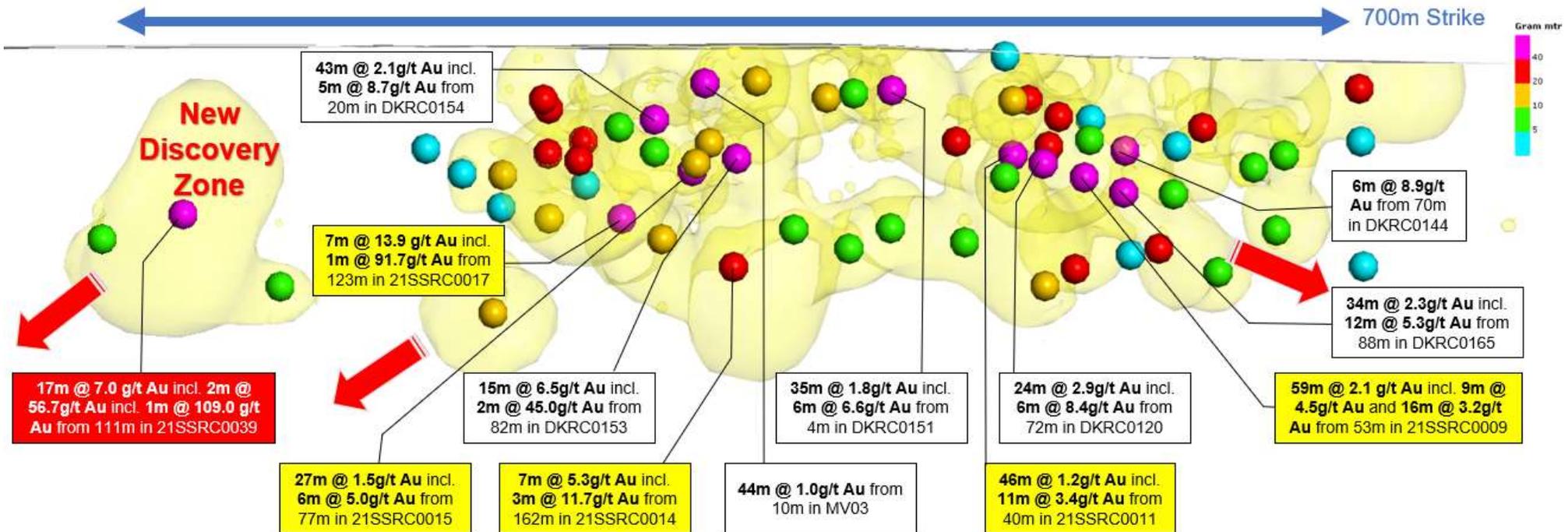


Figure 4 - Long section of Southern Star with pierce points of downhole intersections displayed in gram metres, highlighting the high-grade intersections of previous (white) and GSN intersections (yellow) with the recent high-grade discoveries highlighted in red.



## Next Steps

Further assay results are anticipated from the centre and northern end of the Southern Star deposit. These will be available for release to the ASX very shortly.

Based on this exceptional result, planning has commenced for high-priority follow-up drilling as soon as possible.

**This announcement is authorised by the Executive Chairman on behalf of the Board of GSN.**

### For Further Information Contact:

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## About Great Southern Mining

Great Southern Mining Limited is a leading Australian listed gold exploration company with significant land holdings in the world-renowned gold districts of Laverton in Western Australia and Mt Carlton in North Queensland. All projects are strategically located within 25km of operating gold mills and major operations.

The Company's focus is on creating shareholder wealth through efficient exploration programs and strategic acquisitions of projects that complement the Company's existing portfolio of quality assets.

For further information regarding Great Southern Mining Limited please visit the ASX platform (ASX:GSN) or the Company's website [www.gsml.com.au](http://www.gsml.com.au).

## Competent Person's Statement

The information in this report that relates to Exploration Results is based on information compiled or reviewed by Simon Buswell-Smith, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr. Buswell-Smith is a full-time employee of Great Southern Mining Limited. Mr. Buswell-Smith has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Buswell-Smith consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Forward Looking Statements

Forward-looking statements are only predictions and are not guaranteed. They are subject to known and unknown risks, uncertainties and assumptions, some of which are outside the control of the Company. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward-looking statements or other forecast. The occurrence of events in the future are subject to risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to differ from those referred to in this announcement. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward-looking statements in this announcement speak only at the date of issue of this announcement. Subject to any continuing obligations under applicable law and the ASX Listing Rules, the

Company, its directors, officers, employees and agents do not give any assurance or guarantee that the occurrence of the events referred to in this announcement will occur as contemplated.

Table 1 - Recent drillhole locations at Southern Star (\* denotes re-entry and extension of drillhole)

Drillhole	Easting	Northing	Dip	Azimuth	Depth
<b>21SSRC0023</b>	439504	6880070	-60	250	175*
<b>21SSRC0024</b>	439542	6880085	-60	250	192
<b>21SSRC0039</b>	439473	6880114	-60	250	181
<b>21SSRC0040</b>	439473	6880070	-60	250	175

Table 2 - Significant Intersections for Southern Star (Significant Intercepts are >1m @ 0.1g/t Au with a maximum internal dilution of 2 metre for intervals. \* Indicates portion or all of the intersection contains 4m composites

Hole ID	Depth From	Depth To	Interval Width	Au g/t
<b>21SSRC0023</b>	116	155	<b>39</b>	<b>0.4</b>
	144	145	<b>1</b>	<b>3.6</b>
<b>21SSRC0039</b>	85	87	2	0.2
	91	92	1	0.3
	104	107	3	0.6
<i>incl</i>	105	106	<b>1</b>	<b>1.4</b>
	111	128	<b>17</b>	<b>7.0</b>
<i>incl</i>	111	113	<b>2</b>	<b>56.7</b>
<i>incl</i>	111	112	<b>1</b>	<b>109.0</b>
<b>21SSRC0040</b>	172	173	1	0.2

## JORC Code 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• RC drill cuttings were collected over 1m intervals via cyclone into plastic bags (15-35 kg of sample material):               <ul style="list-style-type: none"> <li>○ For RC assay sampling, 1-3kg of sample was split from each 1meter sample length via a cone splitter. The cyclone was manually cleaned at the completion of each rod and thoroughly cleaned at the completion of each hole. The 1-3kg samples were pulverised to produce 50g charge for fire assay.</li> <li>○ 4-meter comps via spear method and have been taken for the portion of the hole that is interpreted to not be within the main shear zone. The anomalous 4m samples may be assayed in 1m intervals. No reassays have been taken to date.</li> </ul> </li> <li>• RC samples were collected and submitted for analysis at Bureau Vertas in Perth for Fire assay analysis. Field QC procedures involved the use of Certified Reference Materials (CRM's) as assay standards, and blanks.</li> </ul>
<b>Drilling techniques</b>	<p>The drilling operation was undertaken by experienced drilling contractor PXD Drilling.</p> <ul style="list-style-type: none"> <li>• Reverse Circulation (RC) drilling was conducted with a modern truck mounted Schramm. RC samples were obtained utilizing high pressure and high-volume compressed air using</li> </ul>

Criteria	Commentary
	<p>RC 143mm diameter face bit.</p> <ul style="list-style-type: none"> <li>Holes orientations were surveyed using a Reflex-multi at 30m intervals.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>RC sample recoveries of less than approximately 80% are noted in the geological/sampling log with a visual estimate of the actual recovery. Very few samples were recorded with recoveries of less than 80%.</li> <li>Wet RC samples are recorded in logs with only a small portion (5%) detected</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>All RC drilling was logged at the rig by an experienced geologist. <ul style="list-style-type: none"> <li>Lithology, veining, mineralisation, alteration, weathering and oxidation were recorded;</li> <li>Evidence for structural features is noted.</li> <li>RC logging is qualitative and descriptive in nature and</li> </ul> </li> <li>representative portions of samples were retained in chip trays for future reference.</li> </ul> <p>All data was recorded/logged in the field in Log Chief deposit and subsequently transferred to the electronic drillhole database (DataShed5).</p>
<b>Sub-sampling techniques and sample preparation</b>	<p>RC samples (nominal 15-35 kg weight) were split through a cyclone splitter, and a 2-3 kg sub-sample submitted as the primary sample for assay.</p> <p>4-meter comps have been taken for the portions of the drilling. The anomalous 4m samples will be assayed in 1m intervals. 4m assays have been received to date and are anomolus values have been highlighted in Table</p> <p>Field duplicates were taken every 50 samples as a control on sample representivity.</p> <p>Sample size is regarded as appropriate</p>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>Assay technique is Fire assay and is regarded as total</li> <li>Assaying of the RC drilling samples are being conducted by Bureau Veritas, Perth.</li> <li>Field QC procedures involved the use of Certified Reference Materials (CRM's) as assay standards, in conjunction with duplicates and blanks. The results of this analysis are reviewed when results are received.</li> <li>The fire assay gold analyses undertaken are considered a total assay method and is an appropriate assay method for the target-style mineralisation.</li> </ul> <p>Standard lab QC was also implemented as part of the geochemical testing protocol.</p> <p>No geophysical tools have been applied to the samples, or down hole, at this stage.</p>
<b>Verification of sampling and assaying</b>	<p>Results are verified by the geologist before importing into Datashed.</p> <p>No twin holes have been conducted</p> <p>Data is collected by tablet in the field and is imported into Datashed5.</p> <p>RC Field QC procedures involved the use of Certified Reference Materials (CRM's) as assay standards and blanks. Field duplicates were collected also undertaken.</p> <p>Assay data is reviewed prior to importing into Datashed no adjustments are made to raw assay files.</p>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>All data location points referred to in this report are in:</li> <li>Datum: Geodetic Datum of Australia 94 (GDA94) Projection: Map Grid of Australia (MGA)</li> <li>Zone: Zone 51</li> <li>All collar surveys were completed using handheld GPS (+/- 5m accuracy).</li> <li>Drill rig alignment was attained using a handheld compass and verified with downhole surveys collected near-surface followed by approximately every 30m.</li> <li>Downhole surveys were routinely carried out, generally on continuous measure,</li> </ul>

Criteria	Commentary
	<p>conducted using Reflex-multishot.</p> <ul style="list-style-type: none"> <li>The 3D location of individual samples is considered to be adequately established and in line with industry standards for this stage of exploration.</li> <li>Topography is nominal at this stage holes will be picked up using a DGPS in the future</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>The drill hole spacing ranges is not systematic, however most holes are drilled at 250° across the regional strike. Drill hole collar positions are based solely on the drilling of specific exploration targets. I</li> <li>The RC drill holes were planned to test the extension or down plunge extension of the ore body.</li> <li>Other RC drilling holes were designed over areas of interest from field mapping activities.</li> <li>Sampling of RC cuttings has been undertaken at 1m intervals at areas of interest, appropriate high-grade mineralisation.</li> <li>The current drill hole spacing and distribution is not sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure and classification.</li> <li>4m sampling compositing has been applied to areas of less interest and for regional exploration holes.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>The drill holes have been designed to cross cut the main lithology 250° to maximise structural, geotechnical and geological data.</li> <li>No drilling orientation and/or sampling bias has been recognised at this time.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>Logging has been carried out by GSN and contract personal who were always on-site during drilling.</li> <li>No third parties have been allowed access to the samples.</li> <li>Samples were shipped directly from site to a secure stored site in Laverton to undergo evaluation.</li> <li>Select samples for geochemical analysis were transported from Laverton to Bureau Veritas in Perth where upon receipt the samples are officially checked in and appropriate chain of custody documentation received.</li> </ul> <p>All sample information is kept in paper and digital form. Digital data is backed up onto the Company server regularly and then externally backed up daily.</p>
<b>Audits or reviews</b>	No audits or reviews have been conducted.

## Section 2 Reporting of Exploration Results

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	The tenement E38/3501 is in good standing and was granted on February 17 2021. Great Southern Mining Ltd is the holder
<b>Exploration done by other parties</b>	Relevant exploration done by other parties are outlined in the body of this report or previous GSN ASX announcements.
<b>Geology</b>	Mineralisation at Golden Star occurs as several stacked lenses within a sequence of foliated sheet-like gabbroic intrusive units and is associated with quartz veining and sulphide alteration between two strike parallel shear zones. The deposit is hosted in a fractionated dolerite sill, overturned and younging to the west that is over 100m wide in areas. Within this dolerite sill the most fractionated part, a quartz-magnetite rich unit up to 80m wide, appears to be the preferential host of the gold mineralisation.
<b>Drill hole Information</b>	All the drill holes reported in this report are summarized in in the report

Criteria	Commentary
	<p>Easting and northing are given in MGA94 – Zone 51 coordinates.</p> <p>RL is AHD</p> <p>Dip is the inclination of the hole from the horizontal. Azimuth is reported in magnetic degrees as the direction the hole is drilled..</p> <p>Down hole length is the distance measured along the drill hole trace. Intersection length is the thickness of an anomalous gold intersection measured along the drill hole trace.</p> <p>Hole length is the distance from the surface to the end of the hole measured along the drill hole trace.</p>
<b>Data aggregation methods</b>	<p>Significant assay intervals are recorded above 0.1g/t Au with a maximum internal dilution of 2m. no top cuts applied.</p> <p>A breakdown of the high-grade Interval is shown in the body of the report.</p>
<b>Relationship between mineralisation widths and intercept lengths</b>	<p>All significant intersections are quoted as downhole widths. The mineralisation has a near vertical orientation most holes are drilled at a -60-degree dip which is industry standard.</p> <p>All lengths are reported as downhole and the section in the body of the report displays the relationship between drill hole angle and mineralisation interpretation.</p>
<b>Diagrams</b>	<p>Relevant Diagrams are included in the body of this report.</p>
<b>Balanced reporting</b>	<p>All matters of importance have been included.</p>
<b>Other substantive exploration data</b>	<p>All relevant information has been included.</p>
<b>Further work</b>	<p>Future exploration includes assessment of recent drill results. Mineralisation is open along strike and at depth. Diagrams highlight potential area of interest for follow up work.</p>