

ASX ANNOUNCEMENT

8 September 2022

New Gold Targets Identified Along Strike of Southern Star and Ben Hur

Highlights:

- High-grade gold in soil mineralisation identified along strike north of GSN's Southern Star deposit.
- Four compelling targets identified along the same mineralised trend that hosts Southern Star and the +300koz Au Ben Hur deposit owned by Regis Resources Limited (ASX: RRL).
- Upcoming drilling to target down plunge extensions of the Southern Star deposit and recently identified soil anomalism interpreted to be a potential repeat of Southern Star.
- Extensive multi-element soils collected along strike south of Southern Star submitted for assay (results pending) in order to define priority targets for future drilling.

Great Southern Mining Limited (ASX: GSN) ("**GSN**" or the "**Company**") is pleased to announce recent results of a multi-element soil survey conducted at its Duketon Gold Project, located 60km north of Laverton, Western Australia. GSN's Southern Star deposit is located on the prolific Rosemont-Ben Hur Trend, with Southern Star only 4km along strike south of the +300koz Au Ben Hur deposit owned by Regis Resources Limited (ASX:RRL). With GSN's multi-element soil survey so far identifying four compelling new targets within ~1.5km along strike north of Southern Star, drill design work is now underway with drilling targeted for Q2 FY23 to test down plunge extensions of the Southern Star deposit and a potential repeat of Southern Star (Figure 1).

GSN's Executive Chairman, John Terpu, commented:

"Further to the highly successful Reverse Circulation drilling programs at Southern Star, the Great Southern geological team has identified and mapped strike extensions along the Southern Star mineralised corridor. We are excited by the compelling new soil anomalies that have been generated north of Southern Star and are expecting the southern portion of the soil program to deliver similarly exciting results. It is remarkable how little exploration has been undertaken along this prolific +1.5Moz Au mineralised trend that hosts Ben Hur, Rosemount and Southern Star. The fact that GSN have 12km of this highly prospective shear zone to explore bodes well for further discoveries."

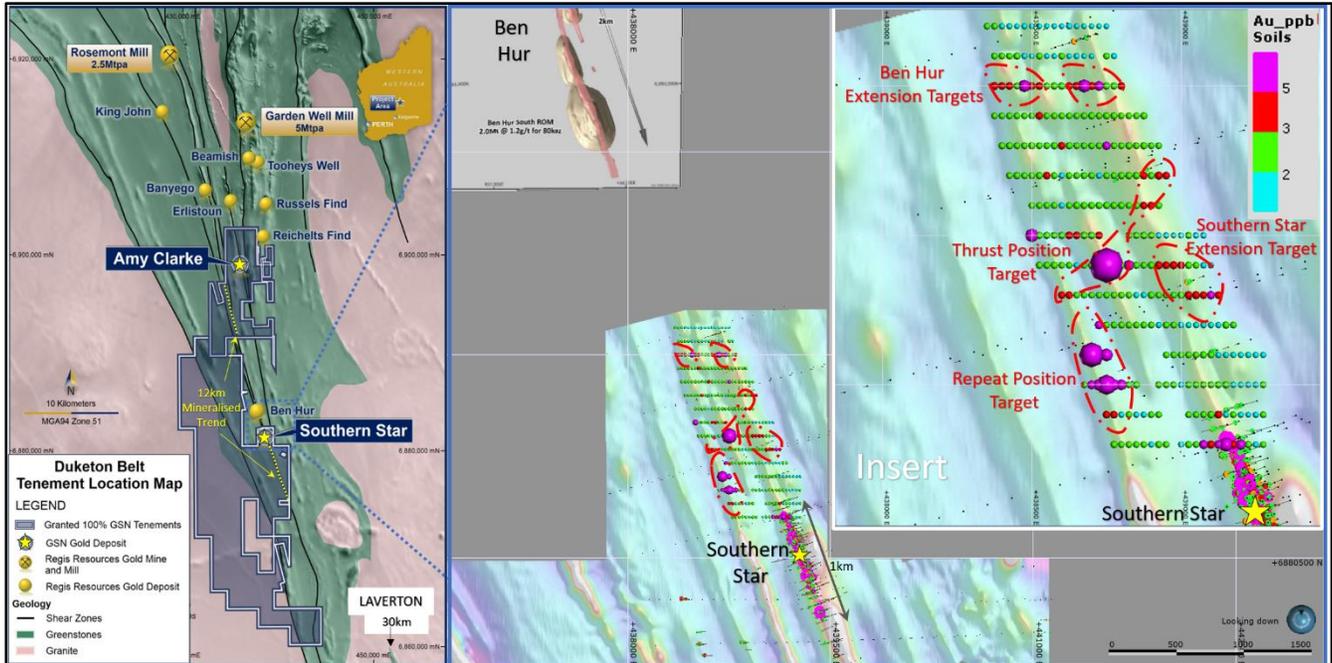


Figure 1: Plan view of Southern Star with draped magnetics (TMI) highlighting newly identified gold in soil target areas in relation to Southern Star.

Southern Star Soil Program

During June 2022, a 300-sample soil program was completed along strike north of Southern Star. Samples were taken on a 100m wide line spacing, 50m apart. Based on a combination of the recently gained geological understanding and the available (new soils and old vacuum) geochemical data, four new targets areas are apparent (Figures 1 and 4).

1. Southern Star Extension
2. Ben Hur Extension.
3. Central Thrust Position.
4. Repeat Position.

Drilling along the trend by previous explorers appears to be limited to shallow ~80m wide spaced RAB and aircore drilling (**Error! Reference source not found. 2**), making previous exploration ineffective. The new gold in soil anomalies have not been drilled and the Company is planning further RC drilling to test the northern strike extensions and depth potential at Southern Star. Multi-element analysis results from the recent drilling has also been used to vector in on mineralisation at these compelling targets.

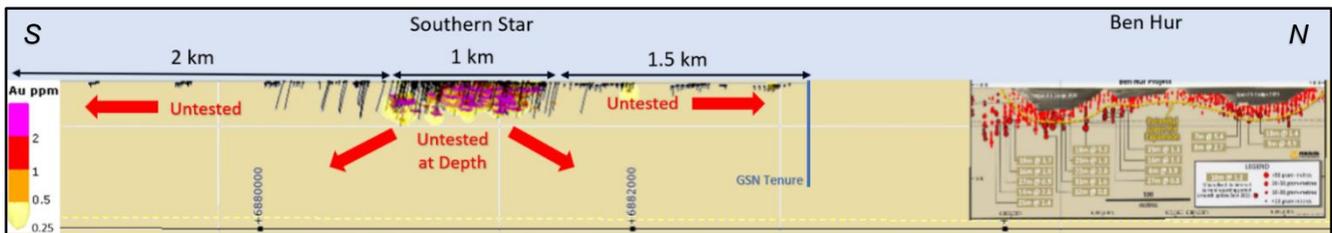


Figure 2: Long section of Southern Star highlighting the underexplored and poorly tested areas along strike and at depth.

An extensive multi-element soil program is also currently underway south of Southern Star (Figure 3). The use of trace level multi-element soils was pivotal in defining the Amy Clarke Prospect and this same technique will be used to test the strike on this well recognised mineralised corridor.

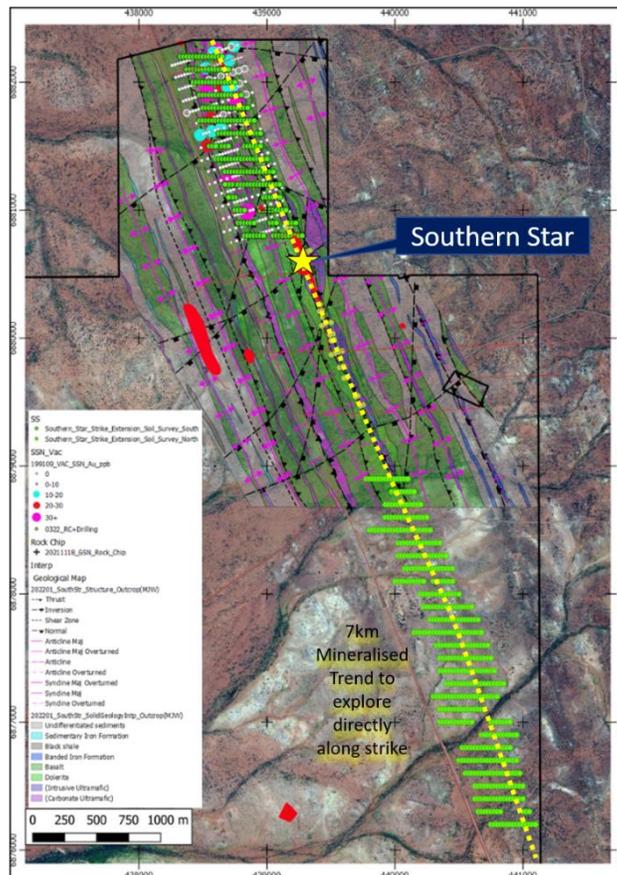


Figure 3: Plan view of the Southern Star Area highlighting recently completed detailed mapping of the area and planned soil program underway (green circles).

Technical Discussion

Trace level methods by aqua regia digestion and ICP-MS finish are excellent for regolith, used to detect gold anomalies indicating mineralisation below surface. Samples were sieved in the field to 1.6mm and an approximate 1-kilogram sample was then sent to the laboratory for further preparation and assayed for gold using trace level detection. By sampling the fine fraction (180 microns), it is intended to aid in detecting gold anomalies through the thin cover that is found within the Project area. Soils were analysed using multi-element trace level detection limits with the intention to detect areas of gold and pathfinder anomalism previously unidentified and correlate to known areas of anomalism in historic datasets.

Gold in-soil targets with pathfinder element association are highly ranked. Pathfinder elements tungsten, antimony and arsenic showed excellent correlation with two target areas, being the Ben Hur Extension and the Repeat Position Target.

Gold association with pathfinder elements such as tungsten and antimony indicate that the source of the anomalies is less likely to be transported as these elements are less mobile within the weathering regime.

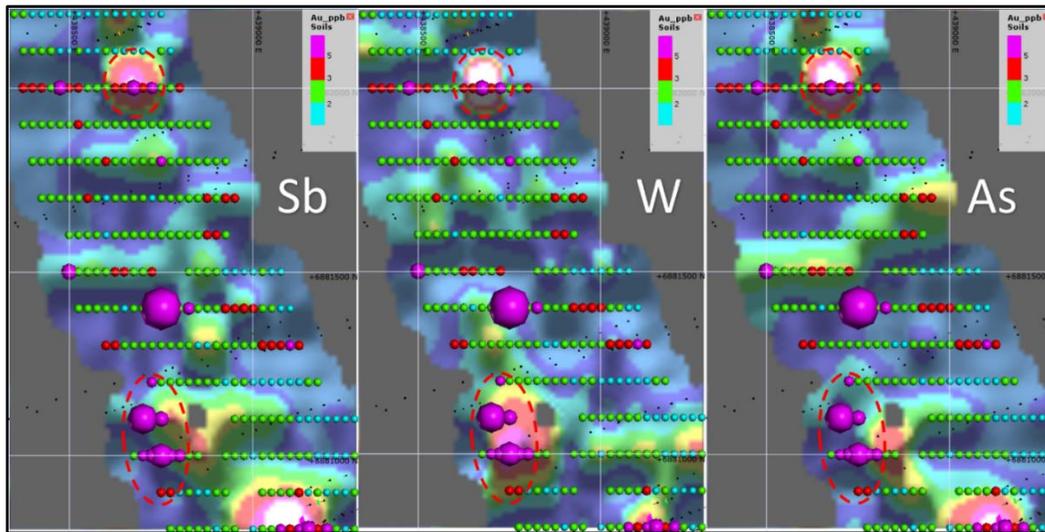


Figure 4: Gridded maps using loGas standard algorithm, based on data percentiles, to determine anomalism, highlighting relationships of Antimony (Sb), Tungsten (W) and Arsenic (As) with gold.

The quartz dolerite is the primary host to high-grade mineralisation at Southern Star. Most gold bearing veins are parallel to the shearing and the stratigraphy (NNW-SSE) and are dipping sub-vertically. High-grade mineralisation is associated with strong to intense quartz-albite-carbonate ± sericite alteration, quartz veining and disseminated sulphides (pyrite/pyrrhotite >3%).

Mapping total sulphide percentage against gold in soils has also been completed and is another effective tool in ranking and identifying target areas due to the sulphide component within the ore zones at Southern Star. Results indicate a distinct correlation between sulphide anomalism and two gold in soil targets (Figure 5).

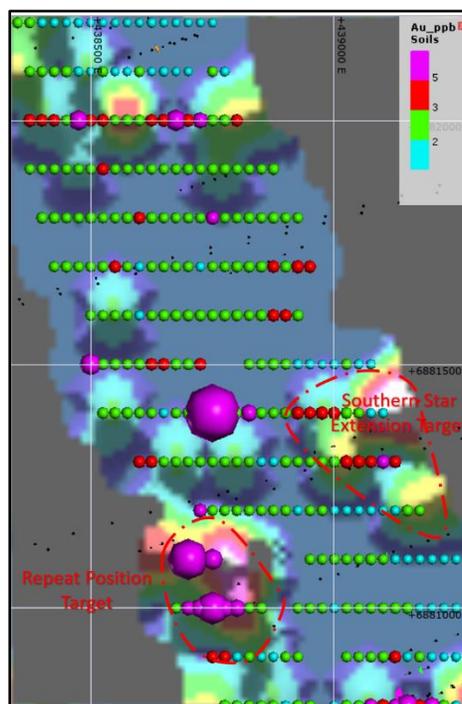


Figure 5: Sulphide percentage gridded map using loGas standard algorithm, based on data percentiles, highlighting target areas that correlate with gold in soil targets (Repeat position target and Southern Star Extension Target).

Duketon Gold Project

GSN shares the Duketon Greenstone Belt with gold producer Regis Resources Limited, which has been successful in the identification of +8Moz of gold resources (refer to Regis Resources Limited website). The majority of these deposits reside on major well understood shear zones. GSN's tenure in the Duketon Greenstone Belt includes significant portions of these shear zones and through the use of magnetic data and geological mapping, GSN immediately identified these shear zones as high priority target corridors and have aggressively begun to explore these well understood trends. It is interpreted that all three mineralised corridors continue into GSN's tenure, including (refer Figure 6):

- ~8km of the Eristoun Trend
- ~7km of the Garden Well Trend
- ~12km of the Rosemont-Ben Hur Trend.

Southern Star resides on the Rosemont-Ben Hur Trend and is only 4km south of Ben Hur. This prolific trend has produced well over 1.5Moz of resources for Regis Resources Limited. The successful drill results at Southern Star to date, in combination with its position along strike from other significant deposits, has demonstrated a potential mineral resource development at Southern Star is emerging.

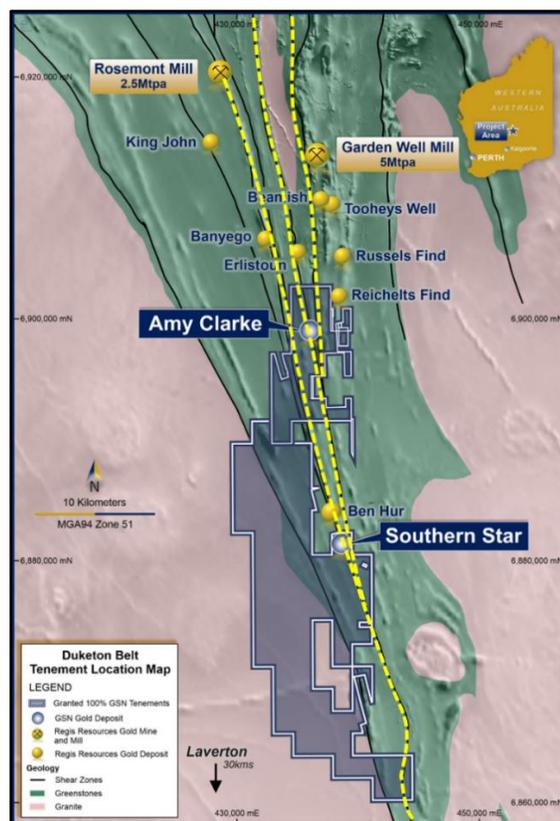


Figure 6: Plan view of GSN's tenement holding in the Duketon Project highlighting the location of Southern Star and mineralised corridors (in yellow) with Regis Resources Limited owned gold deposits and operating mills.

The release of this ASX announcement was authorised by the Executive Chairman on behalf of the Board of Directors of the Company.

- ENDS -

For further information contact:

John Terpu, Executive Chairman.

+61 8 9240 4111



About Great Southern Mining

Great Southern Mining Limited is a leading Australian listed exploration company. With significant land holdings in the world-renowned districts of Laverton in Western Australia and Mt Carlton in North Queensland, all projects are located within 25km of operating 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.

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.

JORC Code 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	The 300-soil program was undertaken in June this year covering a 1.6-kilometre long and 500m wide area over an area north of Prospect area known as Southern Star. Samples were taken below the organic layer (~10cm to 30cm BS) on 100m wide line spacing 50m apart with some lines extended over areas of interest. Samples were sieved in the field to 1.6mm and approximately 1 kilogram sample was then sent to the ALS laboratory in Perth where it was mechanically sieved down to the fine fraction portion (180 microns) and was assayed for gold and 48 other elements using ME-MS61
Drilling techniques	No drilling reported.
Drill sample recovery	No drill recovery was reported.
Logging	Soil sample site sites are described noting regolith regime and sample depth.
Sub-sampling techniques and sample preparation	<p>Sample preparation of Great Southern Mining samples follows industry best practice standards at accredited laboratories.</p> <p>Samples were sieved in the field to 1.6mm and approximately 1 kilogram sample was then sent to the ALS laboratory in Perth where it was mechanically sieved down to the fine fraction portion (180 microns)</p> <p>Sieves were cleaned thoroughly between samples, no duplicates or field standards were taken due to the early stage of exploration</p> <p>Samples were taken below the organic layer (~10cm to 30cm BS) to ensure in-situ material.</p> <p>Sample size of ~1kg is deemed appropriate for fine fraction soil survey.</p>
Quality of assay data and laboratory tests	<p>Assay technique is Aqua regia and is considered partial and is an appropriate assay method for the No geophysical tools have been applied to the samples, or down hole, at this stage.</p> <p>No QC was reported.</p> <p>Soil samples were submitted to ALS Perth, Au by aqua regia extraction with ICP-MS finish using Au TL44 (50gm sample) trace level methods by aqua regia digestion and ICP-MS finish are excellent for regolith, where gold anomalies indicating mineralisation below surface are well-characterised. Aqua regia dissolves native gold as well as gold bound in sulphide minerals; however, depending on the composition of the soil, gold determined by this method may or may not match recovery from fire assay methods</p> <p>48 Multielement super trace package ME-MS61 was used, ALS has lowered the detection limits on key pathfinder elements such as As, Sb, Se and TI to near or below average crustal abundance, revealing anomalous patterns at levels previously unattainable due to technical limitations.</p>
Verification of sampling and assaying	<p>No drilling is reported</p> <p>Primary soil sampling data was collected in hard copy and entered into excel spreadsheets before being transferred to the master SQL database</p> <p>no assay data has been adjusted.</p>
Location of data points	<p>All sites are in MGA94 – Zone 51 grid coordinates using a hand-held GPS +/- 5m</p> <p>Topographic control in nominal.</p>
Data spacing and distribution	Data Spacing is variable see plans in report, in general samples were taken on 100m wide line spacing 50m apart with some lines extended over areas of interest.

Criteria	Commentary
	Unknown due to early-stage exploration No composite sampling
Orientation of data in relation to geological structure	No sample bias has been detected at this early stage. No drilling orientation and/or sampling bias has been recognised at this time.
Sample security	Samples are collected in polyweave bags and delivered directly from site to the assay laboratories in Perth, by a GSN employee.
Audits or reviews	No audits or reviews have been conducted.

Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	The tenement E38/3501 is in good standing and was granted on February 17, 2021. Great Southern Mining Ltd is the holder
Exploration done by other parties	Relevant exploration done by other parties are outlined in the body of this report or previous GSN ASX announcements.
Geology	Mineralisation at Sothern 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.
Drill hole Information	No drillhole information reported No material information has been excluded
Data aggregation methods	Soil samples are reported only. Metal equivalent values are not reported.
Relationship between mineralisation widths and intercept lengths	No drilling results reported.
Diagrams	Relevant Diagrams are included in the body of this report.
Balanced reporting	All matters of importance have been included.
Other substantive exploration data	All relevant information has been included.
Further work	Future exploration includes assessment of recent soil results. Diagrams highlight potential area of interest for follow up work. At this stage, an aircore and RC program is being designed.