

## ASX ANNOUNCEMENT

27 April 2021

# Multiple New Targets Identified at Duketon

### Highlights

- **Twenty-one** new targets identified and ranked from evaluation of the newly acquired regional exploration database in the Duketon Belt including more than 12,000 drill holes and 24,000 soil samples.
- Seven newly identified targets are drill ready, with Golden Star the most advanced and first in line.
- An extensive soil sample program is due to commence in April at newly identified One Weight Wonder target to refine the coherent area of anomalism which currently has a strike length of 1 km.
- Drill program design underway at Golden Star deposit, which 2017-18 drilling showed to be over 600m of strike length of thick continuous zones of gold mineralisation with multiple plus 50-gram-metre gold intersections (refer GSN ASX ann. 2/2/21).
- High-grade gold trends in historic drill data correlate to the same mineralised structure that hosts the Rosemont deposit and the Ben Hur deposit.
- GSN's landholding in the Duketon Belt has grown from 2.5km<sup>2</sup> at Cox's Find less than a year ago to 459km<sup>2</sup> today.

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

*"Assessment of the new tenure has identified twenty-one new targets with seven of them ready for drill testing. Golden Star deposit is seen as the highest ranked of these significant opportunities, which we plan to explore immediately. With a project pipeline in place to maximise the probability of discovery, we are confident we are exploring in the right areas on all fronts. We now hold 459km<sup>2</sup> of highly prospective tenure in the region and this has opened the floodgates of target generation and project development in the Laverton region."*

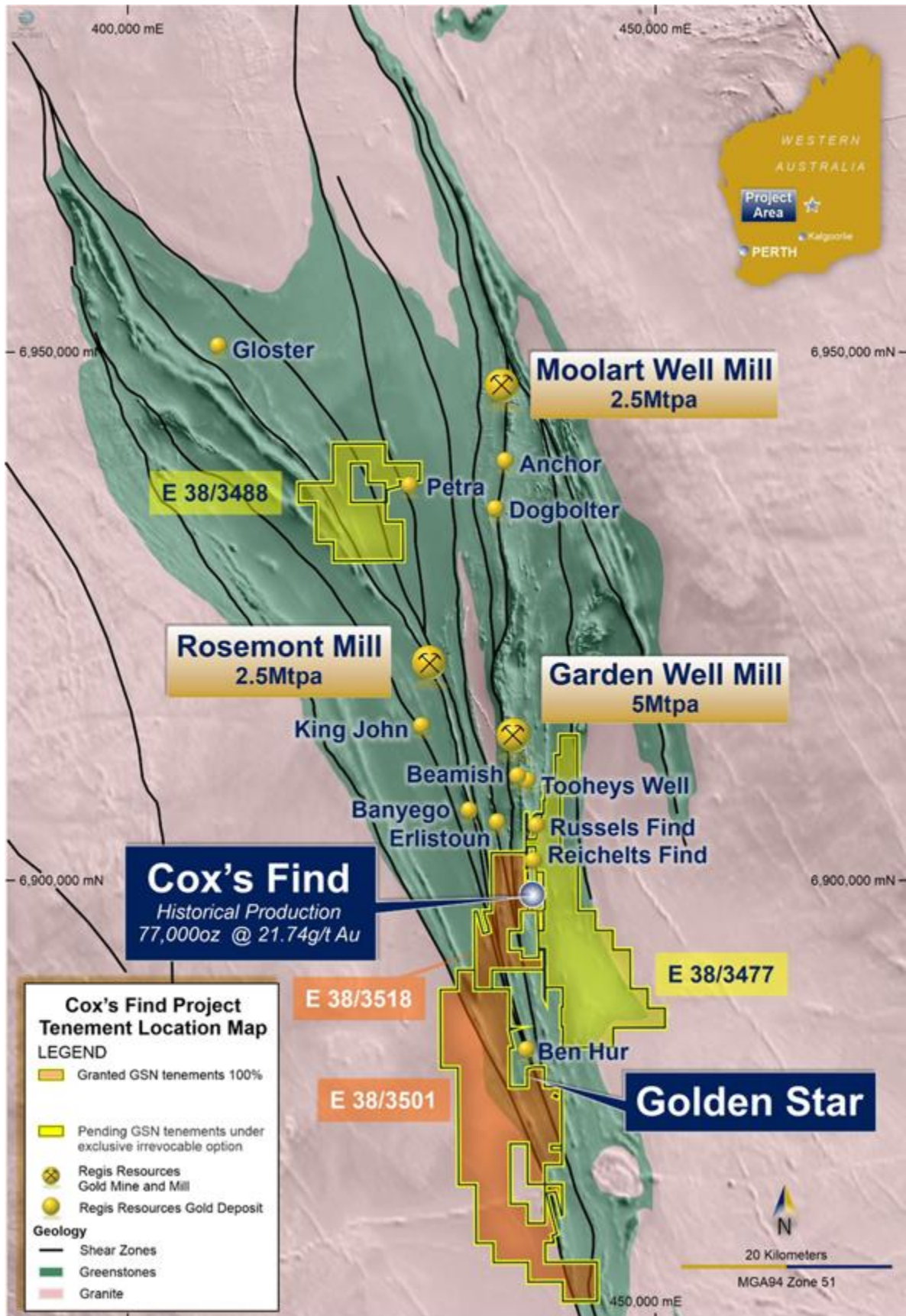


Figure 1 - Plan view highlighting GSN's large tenement package and the highly prospective mineralised trends

## **Duketon Gold Project**

Less than one year ago, GSN's land position in the Duketon Belt was limited to the Cox's Find mining leases, totaling only 2.5 km<sup>2</sup> in area. This provided GSN with an entry to the Duketon Belt that was largely controlled by Regis Resources Limited at that time.

GSN's organic growth potential was given a major boost following the acquisition of E38/3518 in July 2020 (refer ASX announcement 28/7/20), that saw GSN's prospective tenure grew to 47km<sup>2</sup>. GSN's most recent acquisition of an irrevocable and exclusive option to purchase three large exploration licenses (refer ASX Announcement 2/2/21) now positions the Company as a serious player in the Duketon Belt with 459km<sup>2</sup> of highly prospective ground.

This land position has further solidified with the grant of E38/3518 (including the targets outlined in the ASX announcement 5/11/20) and E38/3501 (including the Golden Star Deposit). The option to acquire Golden Star has been exercised and the tenement transferred to reflect GSN's 100% unencumbered ownership.

## **Expansive Regional Dataset**

GSN has recently acquired and collated an expansive regional exploration dataset covering its own tenements and the broader Duketon Belt. GSN's database now has more than 12,000 RAB, AC, RC, and DD drill holes over 24,000 soil samples. Most of these drill holes were reconnaissance in nature and drilled to refusal at less than 30m and many ended in gold mineralisation.

The highlight of the dataset was the discovery of more than 8,000m of RC drilling into the Golden Star Deposit with this drilling demonstrating high grades, up to 60g/t Au, and in places more than 90-gram metre intersections.

GSN is also acquiring high resolution aeromagnetic interpretations and the highly regarded Hallberg 1:25,000 scale geological maps around the Laverton district to assist with further drill target identification.

## **Duketon Belt Project Development**

GSN is continuing to review the newly acquired extensive historical database and planning systematic evaluation of the newly acquired tenements and prospects. The clear intent is to develop a strategic exploration pipeline with all levels of target generation.

The pipeline is designed to aid the exploration strategy by ranking the known prospects and targets to highlight the potential of Western Australian portfolio as it stands in 2021. To do this, a "Project Pipeline" process to maximise the probability of discovery has been implemented (Figure 2). Each milestone is defined by a specific deliverable and has a decision "gate" which projects must pass through before moving to the next milestone. Economic criteria and probability of success increase as projects move along the pipeline. The pipeline also aids ranking as it groups projects relative to the level of development.

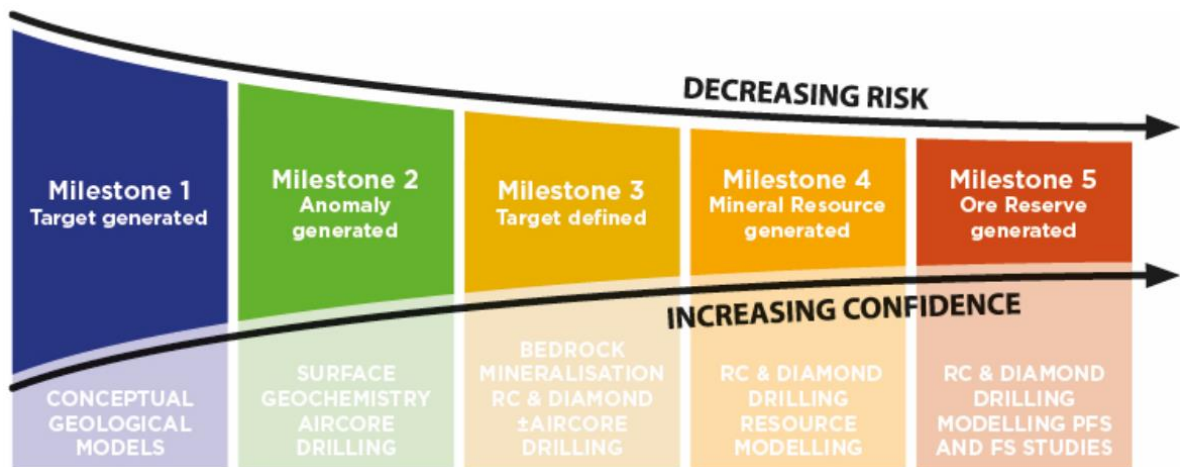


Figure 2 - Project pipeline highlighting development pathway and milestone gates.

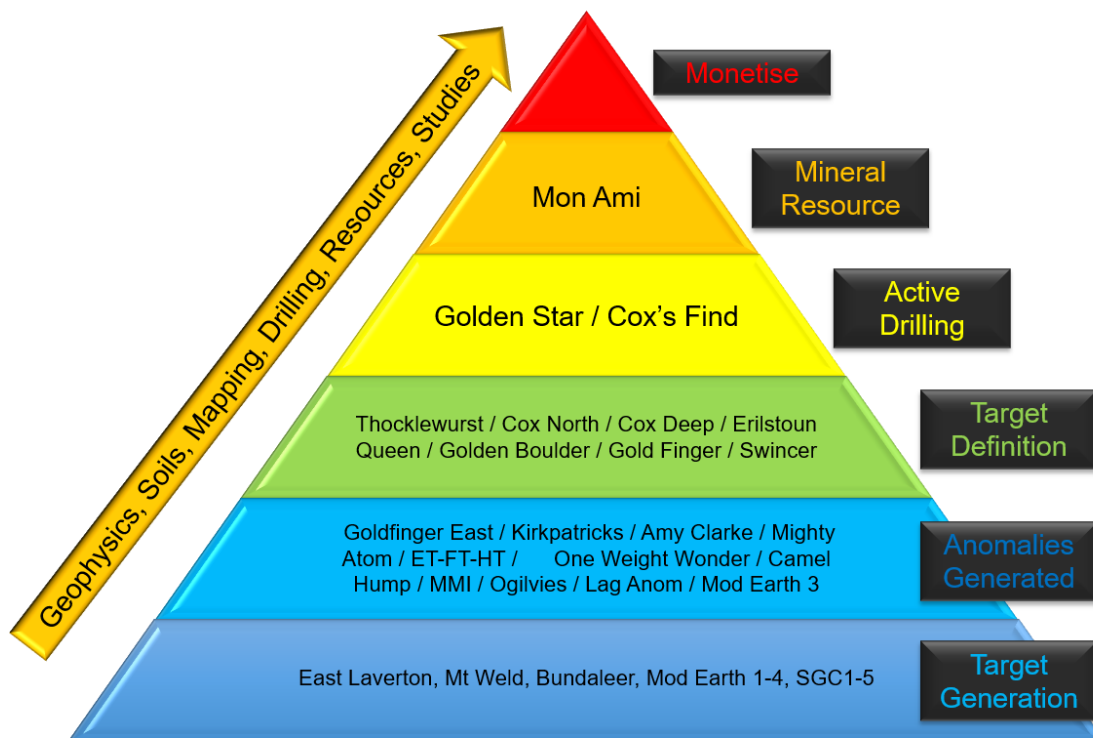


Figure 3 - Exploration pyramid highlighting GSN newly ranked targets and grouped by level of development. Refer to Figure 5 for prospect locations.

This process has highlighted Golden Star deposit has the highest ranked target in the “active drilling” category, whilst Mon Ami has just undergone an extensive drill out in 2020-2021 and is undergoing mine studies presently with the intention to progress to monetisation. All targets have now been placed in the appropriate milestone category and GSN intend to develop the highest ranked targets in each milestone with the intention to progress each target to the next milestone. This process is designed to focus the exploration effort on the best targets in GSN's portfolio with the intention to make new discoveries and to progress projects into development.



## Golden Star Deposit

Golden Star is ranked as the most advanced and prospective target ready for active drilling. Part of this reasoning is that it is located along the same mineralised geological trend that hosts the Rosemont Gold Mine and is only 4km along strike, south of the Ben Hur Deposit which is currently being explored extensively by Regis Resources.

The Golden Star deposit is a standout target and was most recently explored by Duketon Mining Limited in 2017-18 via a program that delineated high grade continuous mineralisation. High grades, up to 60g/t Au, have been intersected as have substantial plus 50-gram metre intersections, and in places more than 90-gram metre intersections. Mineralisation occurs within 4m of the surface in places and high grades are seen throughout the broader mineralisation (refer GSN ASX ann. 2/2/21). Mineralisation is open both to the north, south and down dip.

For these reasons, Golden Star demands immediate exploration drilling due to the coherent, high-grade nature of the gold mineralisation. Planning for an extensive RC drill out is well advanced, and a permission of work from the WA Mines Department (DMIRS) is approved.

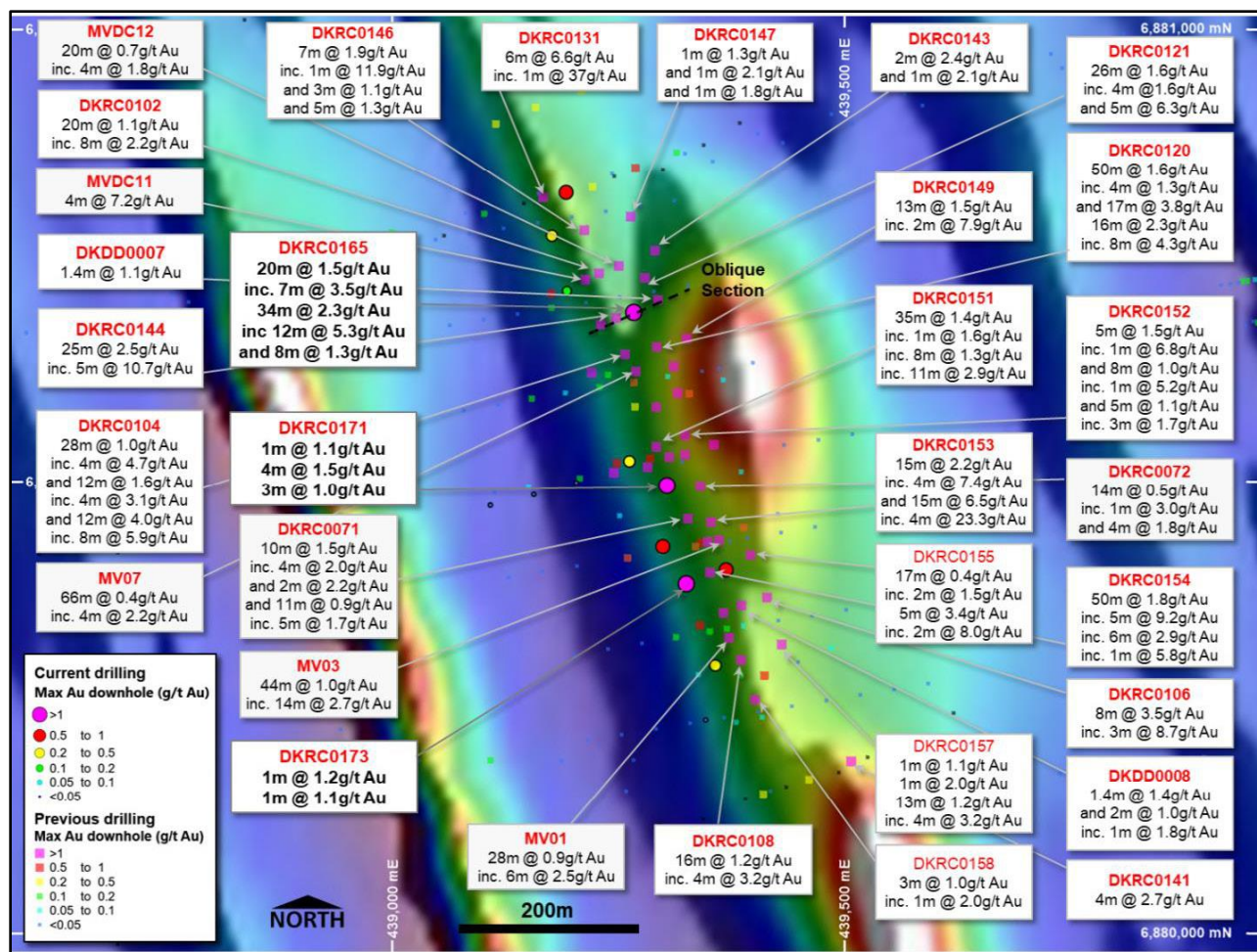


Figure 4 - Plan view highlighting drilling results at Golden Star (source DKM June 2019 Quarterly Report 25/7/19)

## One Weight Wonder

Evaluation of the recently acquired database has resulted in twenty-one newly identified targets. Each target has been ranked and categorised in the appropriate milestone. A highly ranked target, named One Weight Wonder (OWW) is located 1km west of Golden Star (Figure 5).

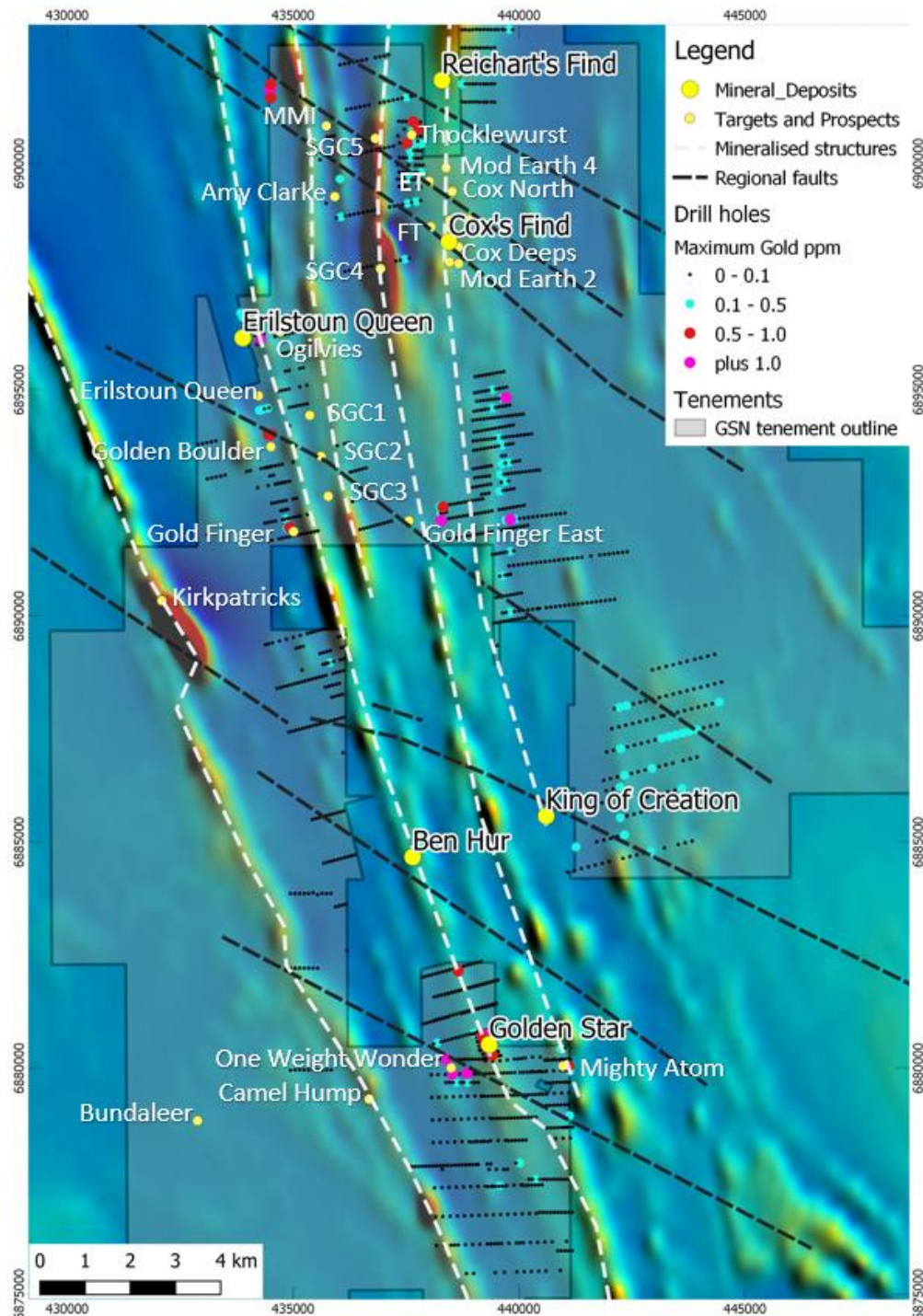


Figure 5 - plan view of GSN Central Duketon prospects



One Weight Wonder target was identified by a regional 340-hole Rotary Air Blast (RAB) program undertaken by Johnson's Well Mining N.L in 1995 which defined a coherent area of anomalism with a strike length of 1 km<sup>1</sup> (Figure 6). High grade intersections include:

- 4m @ 2.7 g/t Au (MVDB227 – 28-32m)
- 4m @ 1.7 g/t Au (MVDB447 – 28-32m)
- 4m @ 1.5 g/t Au (MVDB232 – 12-16m)

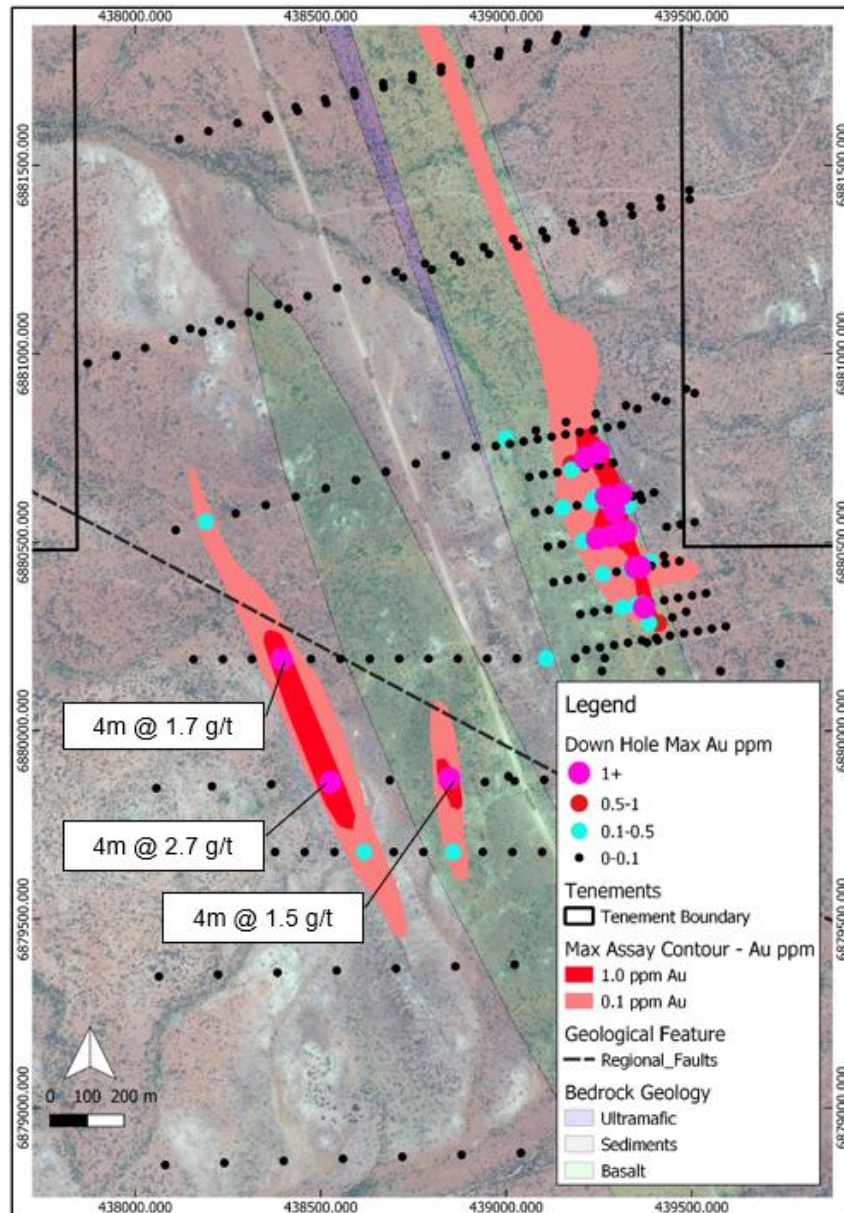


Figure 6 Plan view of One Weight Wonder highlighting anomalous RAB hole high grade gold intersection.

<sup>1</sup> WAMEX report A47345: Johnson's Well Mining N.L: Annual report for the period 15/01/1995 to 14/01/1996

The RAB program was reconnaissance in nature, holes were drilled on 400m line spacing, vertical and drilled to refusal. High grade intersections of 4m @ 2.7 gold from 24m (MVDB227) and 4m @ 1.7 g/t Au (MVDB447–28-32m) correlate to a chert rich lithology within a sediment package which is similar to that seen at Garden Well. These significant intersections also correlate to the orientation of the regional mineralised structures (310°) that hosts all major deposits in the Duketon Belt, such as Garden Well and Rosemont. Amazingly, these significant intersections have not been followed up, and the target remains open.

## Next Steps

Planning for an extensive RC drill out at Golden Star is well advanced, drill rig has been booked and a program of work from the WA Mines Department (DMIRS) is approved.

A soil program at OWW has been designed to delineate the extent of the anomalous gold area with intention to further refine the drill target. The plus 200 multi-element soil program is underway, and it is expected that GSN will be in full swing on a RC drill program at Golden Star in the area by the time samples are analysed. GSN intend to follow up on any anomalies generated from the soil program utilising the expected RC rig onsite with immediate drill testing.

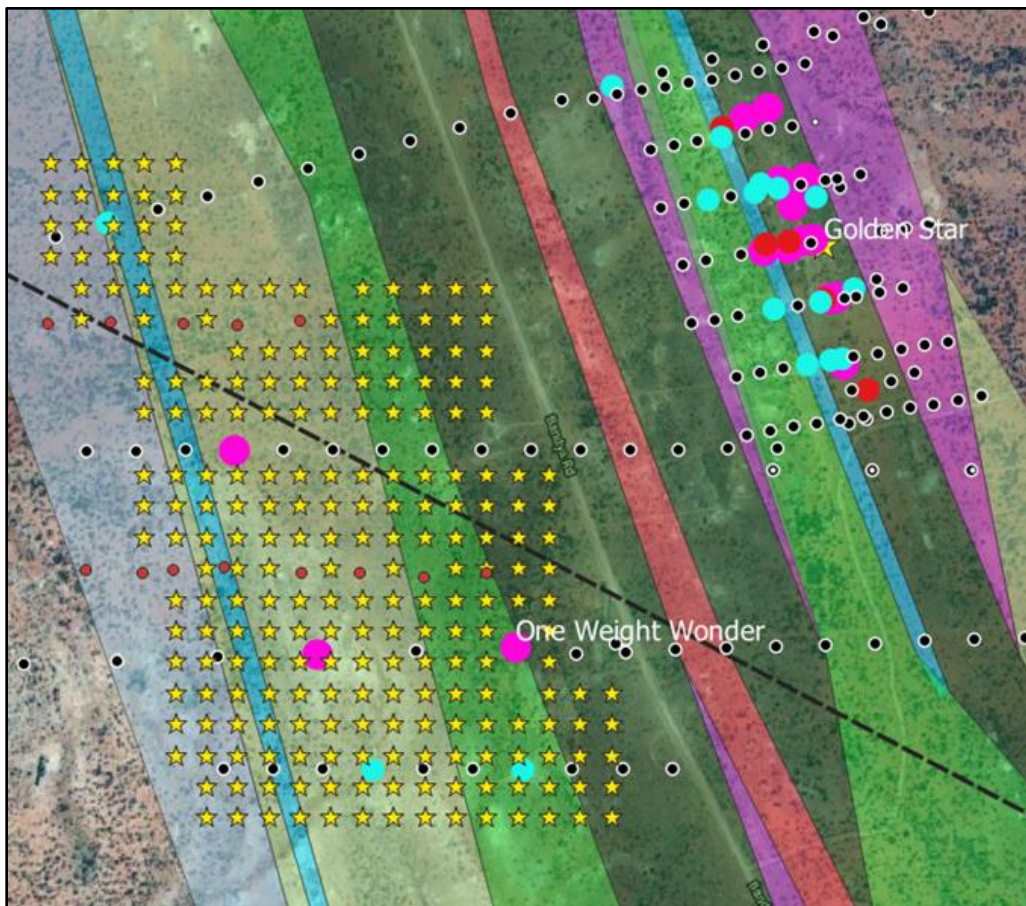


Figure 7 Planned soil survey at One Weight Wonder (yellow stars) with local interpreted geology

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



## 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 located within 25km of operating gold mills and major operations.

The Company's focus is on creating and capturing 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 Exploration Manager WA 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 – Significant Drillhole locations at One Weight Wonder (nominal rL of 495)*

Drillhole	Easting	Northing	Azimuth	Dip	Depth
<b>MVDB227</b>	438526	6879863	0	-90	59
<b>MVDB232</b>	438846	6879874	0	-90	22
<b>MVDB447</b>	438394	6880190	0	-90	46

## JORC Code 2012 Edition – Table 1

Historical drilling data has been digitally compiled from a series of Annual Technical Reports from Exploration activities undertaken by numerous mining companies in the past. Data relating to Golden Star has been previously announced see body of the announcement for further details. Table 1 relates to historic data for One Weight Wonder prospect WAMEX report A47345: Johnson's Well Mining N.L: Annual report for the period 15/01/1995 to 14/01/1996, A48548: Johnson's Well Mining N.L: Annual report for the period 11/06/1995 to 10/06/1996 and A55510: Johnson's Well Mining N.L: Annual report for the period 26/03/1997 to 25/03/1998.

### Section 1 Sampling Techniques and Data

Criteria	Commentary
<b>Sampling techniques</b>	<p>Sampling techniques are not documented well in publicly available reports but it is anticipated that companies used industry standard techniques relative to the vintage of drilling and level of exploration.</p> <p>RAB holes (RAB) were sampled via a 4m composite and sent to Australian Assay Laboratories and assayed for gold by AAS (30g charge D.L. 0.02ppm).</p> <p>Drill hole locations were designed to allow for spatial spread across the interpreted mineralised zone.</p>
<b>Drilling techniques</b>	Rotary air blast (RAB). Drilled by Grimwood Davies
<b>Drill sample recovery</b>	No drill recovery was reported.
<b>Logging</b>	All holes were logged for lithology, weathering, alteration, mineralisation, and veining.
<b>Sub-sampling techniques and sample preparation</b>	The sample size and analytical method are considered appropriate for the type, style, thickness and consistency of mineralisation and level of exploration.
<b>Quality of assay data and laboratory tests</b>	<p>Assay technique is by AAS (30g charge D.L. 0.02ppm). and is deemed appropriate assay method for the target-style mineralisation and level of exploration.</p> <p>No QC was reported.</p>
<b>Verification of sampling and assaying</b>	<p>Alternative GSN personnel have verified the correlation of mineralised zones between assay results and lithology, alteration and mineralisation.</p> <p>No twin holes</p> <p>All holes have been digitally captured from WAMEX reports are deemed reliable.</p> <p>No adjustments or calibrations are made to any of the assay data recorded in the database.</p>
<b>Location of data points</b>	<p>Drill hole collars accuracy varies due to vintage of drilling. Hand held GPS is assumed for more recent drilling.</p> <p>Some holes were are in AMG94 – Zone 51 grid coordinates. And a have been converted to MGA94_Zone 51</p> <p>Topographic control in nominal.</p>
<b>Data spacing and distribution</b>	Data Spacing is variable see plans in report.

Criteria	Commentary
	Data spacing is insufficient to establish a Resource and is the project is at the explorational phase.  Samples that are composites have been discussed see sample techniques section above.
<b>Orientation of data in relation to geological structure</b>	The drill holes have been designed to cross-cut the main lithology to maximise structural, geotechnical and geological data. No drilling orientation and/or sampling bias has been recognised at this time.
<b>Sample security</b>	Sample security protocols were not recorded.
<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>	E38/3501 was granted on 17/02/2020 for a term of 5 years plus extensions. GSN has exercised its option to acquire the tenement and transferred the tenement to reflect its 100% unencumbered ownership.
<b>Exploration done by other parties</b>	Relevant exploration done by other parties has been described in the technical section of this report
<b>Geology</b>	The Duketon Greenstone Belt is comprised of mafic and ultramafic rocks, felsic volcanic and volcanoclastic rocks, and associated clastic sedimentary rocks. The contacts with bounding granitic rocks are typically intensely deformed. Axial surfaces of folds typically trend north-northwest with limbs commonly sheared by major structures. The major regional scale structures are a key element for large scale gold deposition and three of these mineralised structures strike through the new tenements under application and are highly prospective areas for gold accumulation.
<b>Drill hole Information</b>	A list of drill hole coordinates with relevant drillhole information are provided in a table in the body of the report.
<b>Data aggregation methods</b>	Significant assay intervals are recorded above 0.5g/t Au with a maximum internal dilution of 1m. no top cuts applied.  A breakdown of the high-grade Interval is shown in the body of the report.  Metal equivalent values are not reported.
<b>Relationship between mineralisation widths and intercept lengths</b>	All significant intersections are quoted as downhole widths. The mineralisation geometry is unknown at this stage so no relationships can be assumed. All lengths are reported as downhole.
<b>Diagrams</b>	Relevant Diagrams are included in the body of this report.
<b>Balanced reporting</b>	All matters of importance have been included and low value gold results are plotted on maps in conjunction with significant intercepts.
<b>Other substantive exploration data</b>	All relevant information has been included.
<b>Further work</b>	Future exploration is documented in "Next Steps" in the body of the report.