ASX: GSN ASX ANNOUNCEMENT 8 July 2021



# More Drill Ready Gold Targets at Duketon

## Highlights

- Four more large-scale drill-ready gold targets delineated at GSN's Duketon Project.
- Review of historic data has identified multiple drill intercepts of plus 1 g/t Au from shallow RAB and or AC/RC at the following targets:
  - Ogilvie's 4m @ 5.0 g/t Au and 2m @ 4.9 g/t Au
  - Golden Boulder 17m @ 4.3 g/t Au incl 6m @ 11.1 g/t Au
  - Erlistoun Main Line 6m @ 1.3 g/t Au Including 3m @ 2.1 g/t Au
  - Erlistoun East Line 3m @ 2.5 g/t Au and 3m @ 1.8 g/t Au
- High-grade gold trends in historic drill data identified along the same mineralised structure that hosts the Rosemont deposit (>1Moz) and the Ben Hur deposit (0.4Moz).
- Program of Works approved and heritage survey completed providing the option to extend the current RC drill program at Southern Star and One Weight Wonder.

Great Southern Mining Limited (ASX: GSN) ("**GSN**" or the "**Company**") is pleased to announce four drillready targets available to extend the Reverse Circulation (RC) program currently underway at its 100% owned Duketon Gold Project, located 60km north of Laverton, Western Australia (Figure 1).

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

"Great Southern Mining is in an enviable position as we have multiple drill-ready targets set to go and are on the ground drill testing them. We are currently drilling at Southern Star, then One Weight Wonder and now have the option to extend the drilling program to these exciting targets on the Erilstoun trend. The Erlistoun trend has had no systematic deep drilling on it whatsoever, which is compelling considering just how many deposits in the Duketon Belt are found along these regional mineralised structures."

Suite 4, 213 Balcatta Road, Balcatta, WA 6021 Australia

T (08) 9240 4111 E admin@gsml.com.au www.gsml.com.au

ACN: 148 168 825 ABN: 37 148 168 825



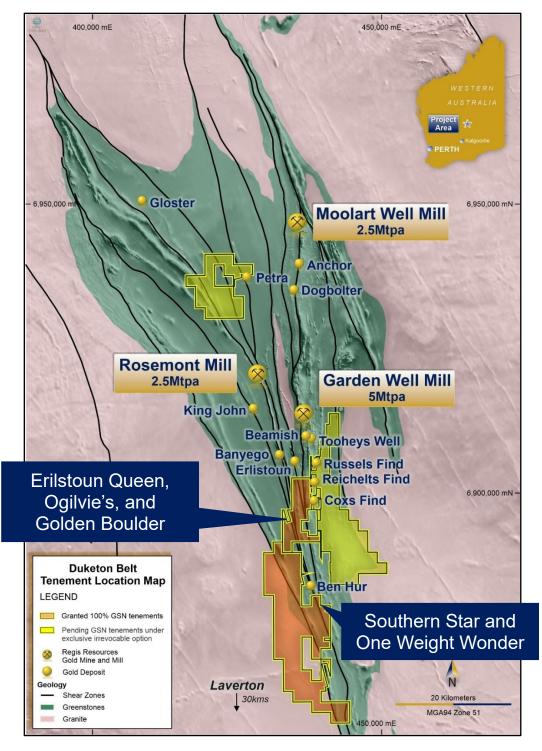


Figure 1 - Plan view of GSN's Duketon Project highlighting prospects referred to in the text.

#### **Regional Exploration Potential**

GSN's Duketon gold project is located 60km north of Laverton on the Duketon Greenstone Belt, which is part of the Archaean Yilgarn Craton in Western Australia. The Duketon Greenstone Belt is a north-northwesterly trending belt of supracrustal rocks and is bounded by granitic rocks (Figure 1). It is bounded by the Hootanui Fault to the west and the Lulu Fault to the east.



Major structures are interpreted to be deep-seated mantle tapping structures that act as conduits or fluid pathways for gold mineralisation. Examination of the gold deposits in the Duketon Belt highlights the relationship of these major structures and proximal large-scale gold deposits such as Garden Well (1.9 Moz), Rosemont (0.8Moz), Moolart Well (0.13Moz), Tooheys Well (0.6Moz) and Baneygo (0.4Moz) (Refer Regis Resources 2020 Annual Report). These Resource figures are in addition to the 28Moz produced in the Laverton district historically.

The major regional scale structures are a key element for large-scale gold deposition, three of these mineralised structures strike through GSN tenements and are highly prospective areas for gold accumulation, including at Erilstoun, Ogilvie's and Golden Boulder (Figure 2).

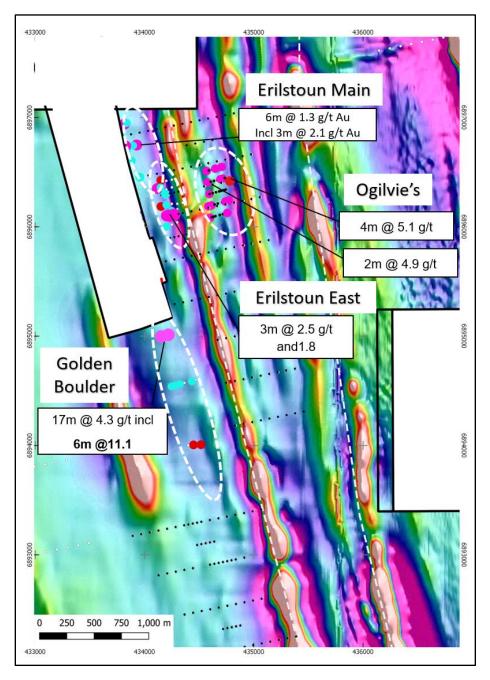


Figure 2 Plan view of the four new drill-ready gold prospects in GSN's Duketon Project over magnetic imagery and maximum downhole gold intercepts



## **Ogilvie's Target**

Historical drilling included 41 shallow holes at Ogilvie's in 1986 with 14 holes intersecting plus 1.0 g/t gold intersections, with higher grades of **4m** @ **5.0** g/t Au (OL 11) and **2m** @ **4.9** g/t Au (OL 06) encountered (WAMEX report A20627). Drilling defined three parallel mineralised gold trends over a 500m strike length (Figure 3).

Mineralisation occurs within gold bearing quartz veins (near vertical 70-90 east) in mafic sheared slivers within a monzogranite porphyry, as identified by renowned geologist Jack Hallberg during mapping of the area (Figure 3).

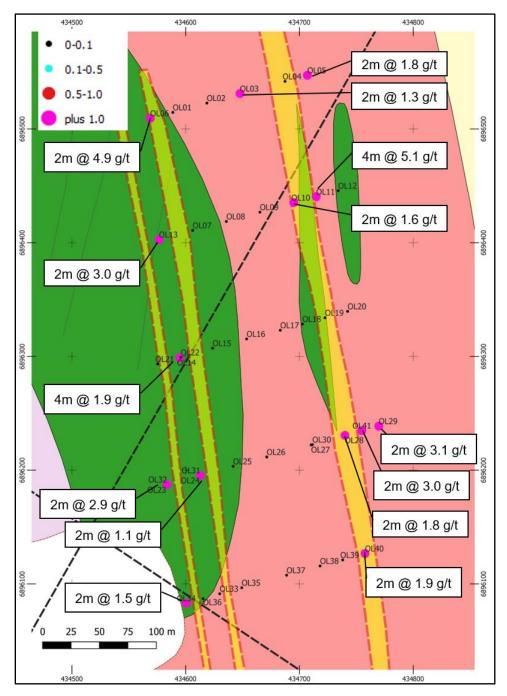


Figure 3 Plan view of Ogilvie's highlighting the significant intersections and mineralised gold trends projected to surface (yellow) and Jack Hallberg mapping illustrating the mafic sheared slivers within a monzogranite porphyry.



Hole ID	Easting	Northing	From (m)	To (m)	Interval (m)	Au Grade (g/t)
OL3	434568	6896531	50	52	2	1.31
OL5	434707	6896547	24	26	2	1.80
OL6	434568	6896509	8	10	2	4.90
OL10	434695	6896435	0	2	2	1.62
OL11	434715	6896440	10	14	4	5.10
including					2	7.70
OL13	434576	6896403	18	20	2	2.97
OL14	434595	6896299	32	36	4	1.86
OL28	434740	6896231	8	10	2	1.75
OL29	434770	6896239	28	30	2	3.13
OL31	434613	6896195	18	20	2	1.08
OL32	434584	6896187	30	32	2	2.86
OL34	434601	6896083	30	32	2	1.52
OL40	434758	6896127	16	18	2	1.87
OL41	434755	6896235	14	16	2	3.03

Table 1 – 1986 significant intersections at Ogilvie's

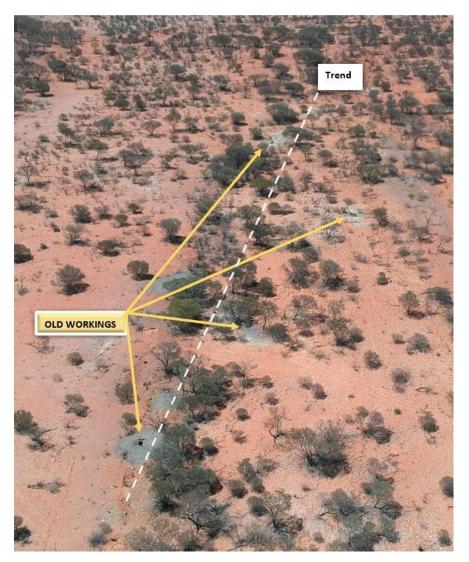


Figure 4 Drone photograph looking south illustrating historical workings at Ogilvie's.



## **Erlistoun Queen**

The Erlistoun Queen trend is defined by a multi-lined set of historic workings that consists of over 50 shallow shafts that strike north-northwest (Figure 2). Erlistoun Queen historic production is reportedly 1,915 tonnes at 28.6 g/t Au for 1,761 ounces of gold and mainly took place during 1901 to 1955 period (WAMEX report A85278).

The workings have been mapped and are divided into three lineaments being the Main zone, the Eastern and Western zone. The Main zone occurs along a basalt-ultramafic contact and mineralisation can be traced for 2km strike length and ranges from 1m to 8m wide zone in fuchsitic sheared basalt. The workings straddle GSN's tenement E38/3518 and neighbouring tenement M38/1241 (owned by Regis Resources Limited ASX:RRL).

## **Erlistoun Queen Main Line Target**

Section line 689750 is typical of the depth extent of drilling in the area and highlights the shallow drilling completed to date. Mineralisation in AMA952of **6m @ 1.3 g/t Au** from 15m (WAMEX report A60613) is interpreted to be related to eastern line of working whilst significant intersection of 8m @ 2.9 g/t Au in RO12 from 8m (WAMEX report A18493) is related to the main line of workings. Both structures are highly mineralised and have not been tested at depth or effectively along strike and represent as a compelling target area for future exploration (Figure 5).

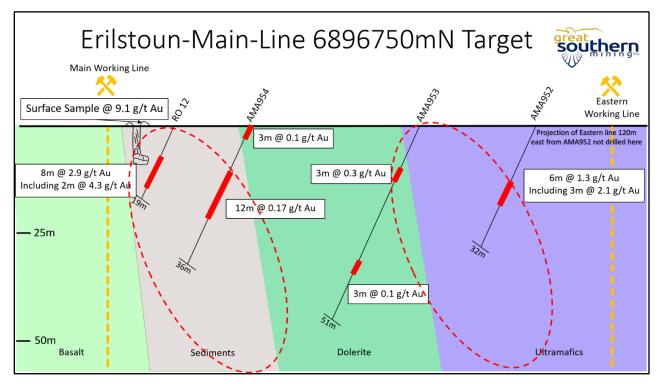


Figure 5 Cross Section 689750mN highlighting significant intersections in shallow drilling and target areas.



## **Erlistoun Queen East Line Target**

The Erlistoun Queen workings are concentrated on the western margin of a district-scale regional magnetic high feature (Figure 2). The magnetic high is interpreted to be the same mineralised structural trend that hosts both Baneygo (0.4Moz) and Rosemount (0.8Moz) deposit to the north and Ben Hur (0.4Moz), to the south, which represents as a compelling target area.

The Eastern zone line of workings strikes for 700m in length with a width of mineralisation up to 10m wide in places, mineralisation is predominantly hosted in a monzogranite porphyry near a chert rich sedimentary contact.

Drill line 6896300mN is of particular interest as drilling undertaken by Sons of Gwalia in 1995 intersected significant mineralisation of **3m @ 2.5 g/t Au** and **3m @ 1.8 g/t Au** in ACC246 within the monzogranite porphyry (WAMEX report A47328). A RC drill program has been designed to test mineralisation below the significant intersections and along strike.

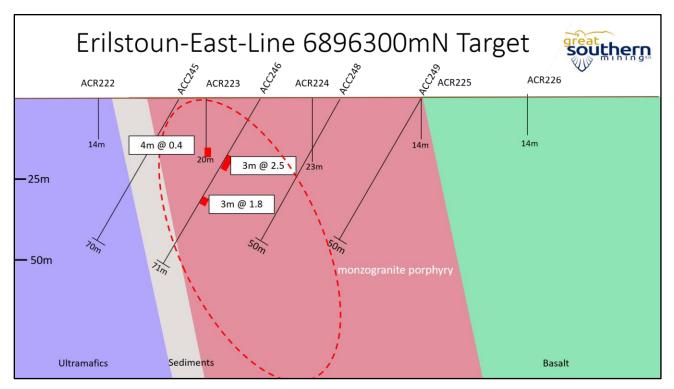


Figure 6 Cross Section 6896300mN highlighting significant intersections in shallow drilling and target area.



## **Golden Boulder Target**

The Golden Boulder target is the extension of the Erlistoun Main line of workings that continues along strike onto E38/3518 down to a Prospect called Goldfinger for a total strike length of 3.6km (Figure 7). The target is defined by a 100ppm down hole arsenic anomaly and 100ppb gold anomaly that strikes directly adjacent to the regional mineralised structure.

Limited exploration has been completed on this known line of mineralisation with only 2 lines of shallow RAB drilling at 600m spacings near Golden Boulder and shallow RAB drilling (average depth 15m) near Goldfinger.

Esmeralda drilled 36-hole RAB program in 1988 in and around the Golden Boulder and Erlistoun area, five holes of the program were drilled where the Erlistoun main line goes undercover across a gold and arsenic anomaly close to M38/1281 boundary (Figure 7). The location of these drillholes is known only to a low level of accuracy due to transforming local grid coordinates to MGA coordinates from historic maps. Significant intersections from this drilling (WAMEX report A23306) include:

- 17m @ 4.3 g/t Au incl 6m @ 11.1 g/t Au (88RC48)
- 3m @ 2.5 g/t Au (88RC50)

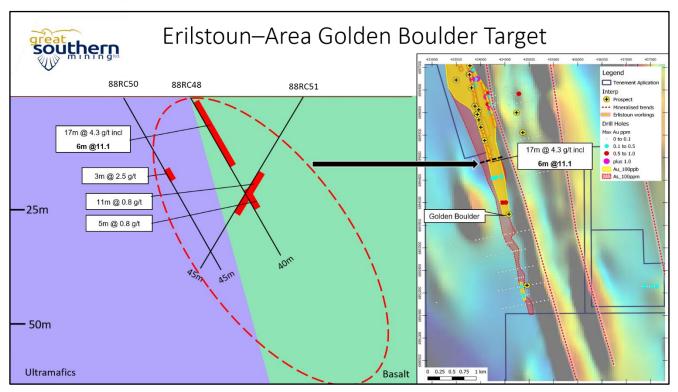


Figure 7 Plan view (right) highlighting the highly prospective mineralised trends identified in regional RTP magnetic data with downhole maximum gold values over arsenic halo. Left image is section ~6894980mN of the high-grade mineralisation drilled by Esmeralda in 1988.



## **Next Steps**

GSN are currently at the start of an extensive 3,500m RC drill program at Southern Star which is expected to continue through to August. The drill rig will then mobilise to the One Weight Wonder Prospect which has never undergone deep RC drilling to complete a plus 1,000m drill program. Assay results from these programs will be reported to the market as they come available.

Drill design for the Erlistoun targets is complete and a heritage survey over the four main target areas was completed in June. A program of works for ground disturbing activities at these areas has also been approved by the Mines Department.

#### This announcement is authorised by the Executive Chairman of GSN.

#### 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 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 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 <u>www.gsml.com.au</u>.

#### **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.



Hole ID	Easting	Northing	Azimuth	Dip	Hole Depth (m)	Hole Type	From (m)	To (m)	Interval (m)	Au (g/t)	Max Au (g/t)
				Og	ilvies						
OL3	434568	6896531	260	-60	60	RC	50	52	2	1.31	
OL5	434707	6896547	260	-60	60	RC	24	26	2	1.80	
OL6	434568	6896509	80	-60	26	RC	8	10	2	4.90	
OL10	434695	6896435	260	-60	60	RC	0	2	2	1.62	
OL11	434715	6896440	260	-60	48	RC	10	14	4	5.10	7.7
OL13	434576	6896403	80	-60	42	RC	18	20	2	2.97	
OL14	434595	6896299	260	-60	42	RC	32	36	4	1.86	
OL28	434740	6896231	260	-60	48	RC	8	10	2	1.75	
OL29	434770	6896239	260	-60	54	RC	28	30	2	3.13	
OL31	434613	6896195	80	-60	26	RC	18	20	2	1.08	
OL32	434584	6896187	80	-60	40	RC	30	32	2	2.86	
OL34	434601	6896083	80	-60	42	RC	30	32	2	1.52	
OL40	434758	6896127	260	-60	40	RC	16	18	2	1.87	
OL41	434755	6896235	260	-60	36	RC	14	16	2	3.03	
		E	Ilistou	n Queen	Main L	ine Tar	get		•	•	
AMA952	433928	6896747	260	60	32	AC	15	18	6	1.3	2.1
RO 12	433827	6896738	260	-60	19	RC	8	14	8	2.9	4.3
	Including						10	12	2	4.3	
	Erlistoun Queen East Line Target										
ACC246	434214	6896305	255	-60	70	RC	27	30	3	2.5	
							42	45	3	1.8	
ACR223	434195	6896300	0	-90	20	RAB	16	20	4	0.4	
	Golden Boulder										
88RC48	434200	6894933	80	-60	40	RAB	2	19	17	4.3	
	Including						2	8	6	11.1	45.3
88RC50	434187	6894930	80	-60	45	RAB	19	22	3	2.5	4.3
88RC51	434221	6894938	260	-60	45	RAB	19	30	11	0.8	3.1

Table 2 Historic significant intersections from Historic RAB, RC and AC drillhole data.



## 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 including Indian Ocean, Esmeralda Exploration, Sabre Resources, Sons of Gwalia Ltd, A1 Minerals Ltd, Eagle Eye Metals Ltd and more recently Stone Resources. Specific reports related to drill results are DMIRS WAMEX report numbers:

A20627: Indian Ocean: Annual report for the period 1985-1986

A85278: Eagle Eye Metals Ltd: Annual report for the period 11/08/2008 to 10/08/2009

A60613: Sons of Gwalia Ltd: Annual report for the period 1/12/1998 to 30/11/1999

A18493: Esmeralda Exploration: Reconnaissance RC Drilling 18/04/1985

A47328: Sons of Gwalia Ltd: Annual report for the period 1/12/1994 to 30/11/1995

A23306: Esmeralda Exploration Ltd Rotary Air Blast drilling ML 38/62 and ML 38/64 Ogilvies 1988

#### Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	Sampling techniques are not documented completely in publicly available reports but it is anticipated that companies used industry standard techniques relative to the vintage of drilling and level of exploration. AMA series holes (AC) were sampled via a 3m composite and sent to Ultra trace Laboratories in Perth and assayed for Au, As, Mo and Sb by aqua regia digest followed by ICPMS using a 40- gram charge. RO series (RC) holes were sampled via 2m composites and sent to SGS Kalgoorlie and assayed for Au by ASS.
	ERAC series (AC) holes were 1m speared samples sent to Aurum Laboratories Pty Ltd and assayed for Au, As, Cu, Ni, Pb, and Zn.
	OL series (RC) holes were 2m riffle split, samples were sent to Genalysis laboratory Services Pty Ltd (Perth) and assay for gold by digest and Atomic Absorption Spectroscopy (AAS)
	ACC series (RC) holes were 3m split and sent to Leonora-Laverton Assay Laboratories (Leonora) and assay for gold by a 50g aqua regia/ASS method
	ACR series (RAB) holes were sent to Amdel Laboratories Perth and assay for gold and arsenic by a 50g aqua regia/AAS method
	88RC series (RAB) holes were 1m riffle split and sent to Australian Assay Laboratories and assayed for gold using fire assay
Drilling techniques	Drill intersections reported are a combination of aircore (AC) reverse circulation (RC) and Rotary air blast (RAB). Significant intersection table in body of report identifies which drill technique used for significant intersections.
	Drill hole locations were designed to allow for spatial spread across the interpreted mineralised zone.
Drill sample recovery	No drill recovery was reported.
Logging	All holes were logged for lithology, weathering, alteration, mineralisation, and veining.
Sub-sampling techniques and sample preparation	No core was taken. AMA series holes (AC) were sampled via a 3m composite. RO series (RC) holes were sampled via 2m composites. ERAC series (AC) holes were 1m speared samples. OL series (RC) holes



Criteria	Commentary
	were 2m riffle split. ACC series (RC) holes were 3m split. 88RC series (RAB) holes were 1m riffle. No record on whether samples were wet or dry.
	No sub sample QC is reported.
	The sample size and analytical method are considered appropriate for the type, style, thickness and consistency of mineralisation and level of exploration.
Quality of assay data and laboratory tests	Assay technique is for drilling is Aqua regia and is considered partial and is an appropriate assay method for the target-style mineralisation. No geophysical tools have been applied to the samples, or down hole, at this stage. No QC was reported.
Verification of sampling and assaying	Alternative GSN personnel have verified the correlation of mineralised zones between assay results and lithology, alteration and mineralisation.
assaying	No twin holes have been drilled.
	All holes have been digitally captured from WAMEX reports are deemed reliable.
	No adjustments or calibrations are made to any of the assay data recorded in the database.
Location of data points	Drill hole collars accuracy varies due to vintage of drilling. Hand held GPS is assumed for more recent drilling. The exact location of many older drillholes is unverified due to transforming local grid coordinates to MGA coordinates from historic maps. For example the 88RC series holes accuracy is considered poor with location of points plus or minus 50m from stated coordinates.
	All holes are reported in MGA94 – Zone 51 grid coordinates.
	Topographic control is nominal.
Data spacing and	Data Spacing is variable see plans in report.
distribution	Data spacing is insufficient to establish a Mineral Resource and the project is at the explorational phase.
	Samples that are composites have been discussed see sample techniques section above.
Orientation of data in relation to geological structure	The drill holes have been designed to cross-cut the main lithology to maximise structural, geotechnical and geological data in most instances. No drilling orientation and/or sampling bias has been recognised at this time.
Sample security	Sample security protocols were not recorded.
Audits or reviews	No audits or reviews have been conducted.

#### Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	Tenement E38/3518 was granted 27/7/2020 in the name of East Laverton Exploration Pty Ltd, a 100% owned subsidiary of Great Southern Mining Limited. The tenement is in good standing.
Exploration done by other parties	Relevant exploration done by other parties has been described in the technical section of this report
Geology	The Duketon Greenstone Belt is comprised of mafic and ultramafic rocks, felsic volcanic and volcaniclastic 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



Criteria	Commentary
	accumulation. The Erlistoun Queen trend is defined by a multi-lined set of historic workings that consists of over 50 shallow shafts that strike north-northwest, parallel to a major mineralised structure.
Drill hole Information	A list of drill hole coordinates with relevant drillhole information are provided in a table in the body of the report.
Data aggregation methods	Significant assay intervals are recorded above 0.2g/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.
Relationship between mineralisation widths	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.
and intercept lengths	All lengths are reported as downhole and the sections in the body of the report displays the relationship between drill hole angle and mineralisation interpretation.
Diagrams	Relevant Diagrams are included in the body of this report.
Balanced reporting	All matters of importance have been included and low value gold results are plotted on maps in conjunction with significant intercepts.
Other substantive exploration data	All relevant information has been included.
Further work	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.