

# Exploration work confirms Steam Engine's large-scale potential: 5,000m extension to drill program commencing immediately

#### **HIGHLIGHTS:**

- First hole at Steam Engine Lode confirms lode thickening significantly down-dip with impressive assay results:
  - o 10m @ 2.8 g/t Au from 58m (SRC105)
    - incl 1m @ 19.7 g/t Au from 58m
    - incl 4m @ 5.9 g/t Au from 58m

Above intersection located within a broader zone of:

- o 19m @ 1.7 g/t Au from 58m
- Significantly increased thicknesses of mineralised zones visually observed in several other holes provide early indication of potentially larger than expected high grade ore shoot system. In response, Steam Engine Lode program extended by a further 5,000m to target down-dip extensions of high grade mineralisation
- Results from maiden drilling program of **13 holes at Dinner Creek** return best intersection of:
  - o 2m @ 2.1 g/t Au from 33m (SRC109)
- Dinner Creek drilling confirms the presence of a large mineralisation system likely related to the Steam Engine and Eastern Ridge lodes. Extensive zones of gold mineralisation were not intersected in the first line of 100m-spaced holes. Mineralisation appears to be controlled by favourable host rock lithology potential targeting tool to identify more extensive mineralisation down-dip
- Recent geological mapping together with historic soil sampling indicate the likely presence of **previously unknown gold lodes under thin cover** to the west and south of the Steam Engine Lode
- **Detailed ground magnetometer survey to commence** over Steam Engine Project area, including anomalous areas to the west to identify lode structures near surface and at depth
- **70 RC holes have been drilled for a total of 5,114m** from initial 8,000m Greenvale drilling campaign all initially-planned Steam Engine Project holes completed.

#### Superior's Managing Director, Peter Hwang commented:

"The 2021 exploration season has started off strongly. With an 8,000 metre drilling campaign and other exploration well underway, the data that has been generated has highlighted the potential for a large-scale deposit at Steam Engine.

"Drilling at Dinner Creek has shed further light on understanding the controls on gold mineralisation at Steam Engine and has also enabled an appreciation of the scale of the mineralising system. Steam Engine certainly appears to be a significant orogenic gold system and in terms of mineralisation style and controls, we are drawing analogies to the large 14 million ounce Callie deposit in the Northern Territory.

"Importantly and not unexpectedly, we are seeing a substantial down-dip thickening of the Steam Engine Lode as evidenced visually by thick sulphide-rich alteration zones observed in several holes. Assays have been received from one of the Steam Engine holes, which has returned up to 19 metres of an ore-grade

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zone in SRC105. Other holes, for which assays remain outstanding, show even thicker zones of continuous sulphide mineralisation up to 23 metres thick.

"These very thick zones of mineralisation are likely to substantially expand the total project ounces and are therefore a priority focus for the program. As a result, we will be extending the program by an additional 5,000 metres of drilling, targeting down-dip extensions to the ore shoot zone.

"At the Dinner Creek Lode, although we didn't immediately identify extensively mineralised zones, the results confirm that the system is very large and the mineralising fluids carry gold. Considering the size of the Dinner Creek system, we are expecting significant gold lode development in areas where the lode intersects favourable host-rock lithology. So, the potential across the project is significant.

"We have also identified several zones of highly anomalous gold-in-soil assays within thin cover to the west and south of the Steam Engine Lode. Lode mineralisation in these areas is likely to be within favourable host rock units. We will soon commence a detailed ground magnetometer survey over the entire project area in order to identify the previously unknown lode structures.

"In the meantime, we look forward to providing regular updates as the flow of assays start ramping up."

Superior Resources Limited (**ASX:SPQ**) (**Superior**, the **Company**) announced today the first batch of assay results from the Company's initial 8,000 metre drilling campaign at its 100% owned Greenvale Project, located approximately 210 km west of Townsville, Queensland (Figures 1 and 2). The Company also reported on further developments at the Steam Engine Project by identifying new potential for additional gold lodes to the west and south of the Steam Engine Lode.



*Figure 1. Location of exploration permits comprising the Greenvale Project. Exploration permit applications are shaded purple. The Greenvale township and existing mines are also indicated.* 



### 8,000m Drilling Campaign

The 2021 initial drilling campaign commenced on 17 June 2021. To date, 70 RC holes have been drilled for a total of 5,114 metres of the initial 8,000 metre program, which represents completion of the Steam Engine Project program, as originally planned under the 8,000 metre campaign. A break-down of the Steam Engine Project drilling is set out in Table 1.

Lode	No. of Holes	Metres
Steam Engine	38	3,297
Eastern Ridge	19	901
Dinner Creek	13	916
Total	70	5,114

Table 1.	Steam	Engine	Proiect	drilling	comprisi	ng part	of the	8.000m	campaign
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As a result of highly positive indicators at the Steam Engine Lode as returned in assays and as visually observed in drill holes, an additional 5,000 metre program will commence immediately to further expand the high grade ore shoot at the Steam Engine Lode.

The assay results reported below are the first batch of results that have been received from the assay laboratories and relate to the following holes:

- Steam Engine Lode 1 hole (SRC105); and
- Dinner Creek Lode 13 holes (SRC106 to SRC118).



Figure 2. Aerial oblique view of the Steam Engine Gold Project area, looking north. Recently drilled Dinner Creek Lode (southern end) in foreground and Steam Engine Lode in background, approximately two kilometres from southern end of Dinner Creek Lode.



#### Steam Engine Lode Drilling Program

The current program at the Steam Engine Lode comprises 38 RC drill holes for a total of 3,297 metres (Figure 3) and is being undertaken with the following objectives:

- Very high grade ore shoot extension and infill drilling;
- Down-dip Resource expansion drilling of the Steam Engine Lode; and
- Infill drilling to establish a maiden Ore Reserve and for Feasibility Study purposes.



*Figure 3. Plan showing the Steam Engine drill hole locations which form part of the 8,000m drilling campaign (in Blue).* 



## Steam Engine Lode Assay Results

Assay results have been received from one hole (SRC105) drilled into the Steam Engine Lode (Table 2). Drill hole SRC105 returned an intersection of **10m @ 2.8 g/t Au from 58 metres downhole, which included a one metre intersection of 19.7 g/t Au** using the existing intersection cut-off of 0.7 g/t Au (Table 2).

Hole ID		From (m)	То (m)	Interval (m)	Au (g/t)	Lode
		58	68	10	2.8	
SRC105	including	58	62	4	5.9	Steam Engine
(cut-off: 0.7	including	58	59	1	19.7	
g/t Au)		75	77	2	1.0	Steam Engine Splay
		86	88	2	1.3	Steam Engine Footwall
<b>SRC105</b> (cut-off: 0.35 g/t Au)		58	77	19	1.7	Steam Engine

 Table 2.
 Significant drill hole intersections (intersectional cut-off grades: 0.7 g/t Au and 0.35% g/t Au).

For Feasibility Study purposes, which will also consider an owner-operated processing plant option, the Company is also assessing the project on the basis of a reduced intersectional cut-off of 0.35 g/t Au. Applying this lower cut-off grade and allowing for some internal waste, results in an intersection of **19 metres @ 1.7 g/t Au** from 58 metres downhole (Table 2).

The lode intersection in hole SRC105 at approximately 50 metres vertical depth, is currently the deepest intersection on line 10250N (Figure 4). Significantly, the assay results confirm a substantial increase in lode thickness at this point. In addition, visual observations of current program drill hole samples indicate a substantial thickening of the lode zone in adjacent lines and at similar depths.



Figure 4. Cross section 10250N showing drill hole SRC105 (in Blue) and existing holes in Black.



### 5,000m Extension to Steam Engine Lode Program

As a result of the highly positive drill results and field observations, the Company has prioritised a 5,000 metre extension to the currently planned Steam Engine Lode drilling program. The extended program is on schedule to commence immediately with a larger and more capable drill rig. This rig is mobilising to site and will replace the current drill rig.

The extended program will total 5,040m and will be undertaken in two stages (Figure 5):

- STAGE 1 14 RC holes (totalling 2,555m); and
- STAGE 2 13 RC holes (totalling 2,485m).



Figure 5. Plan showing the extended 5,000m Steam Engine Program proposed drill holes (in Green). Drill holes marked in Blue and Yellow comprise part of the original 2021 8,000m Greenvale Drilling Campaign. Other holes (in Black) represent 2020 drill holes and historic holes.



#### Dinner Creek Maiden Drilling Program

The initial Dinner Creek drilling program comprised a single line of 13 shallow RC drill holes for 916 metres along the strike length of the main Dinner Creek Lode zone. The holes are spaced between 100m to 250m apart (Figure 6). All holes were completed by 28 June 2021.

The program was designed as a first pass of drilling on a mapped zone of pyritic schists within a sericitic alteration envelope. The Dinner Creek mineralisation and alteration displays remarkable similarity to the Steam Engine and Eastern Ridge lode zones but with many zones appearing to be of greater width at surface.

The drilling in all instances intersected the pyritic schist target which varied in thickness from approximately 2m to 26 metres in true thickness. The lode dips approximately 45 degrees to the west-northwest.

A total of 944 samples were assayed including duplicates and standards.



*Figure 6. Plan showing mapped geology of the Dinner Creek Lode and locations of first-pass RC drill holes.* 



#### **Dinner Creek Assay Results**

Drill hole SRC109 returned the best result from the Dinner Creek drilling program of **2m @ 2.1 g/t Au** from 33 metres downhole (Table 3; Figures 7 and 8).

Assay results and lithological observations from the remaining 12 holes while low in grade, indicate that the mineralising system is substantial in size and carries gold. The pyritic schists while appearing similar to those at Steam Engine and Eastern Ridge, have only low levels of arsenopyrite. However, they do have anomalous levels of copper, similar to the Steam Engine and Eastern Ridge mineralisation.

Importantly, further observations may indicate a potential geochemical control on the mineralisation of gold. Observations across the Steam Engine Project area as well as nearby prospect areas such as Bottletree, indicate that where the lode structures have intersected favourable host rocks, ore-grade gold mineralisation appears to have formed.

In addition, the Dinner Creek Lode structure is likely to be a part of the Steam Engine and Eastern Ridge mineralising and structural system that connects to the western lodes at depth. This represents potential for significant gold mineralisation within the Dinner Creek structure at depth and greater potential for a large-scale gold deposit to be developed within the Steam Engine gold lode system.

Hole ID		From (m)	То (m)	Interval (m)	Au (g/t)	Lode Description
SRC106		15	16	1	0.11	Hangingwall side of pyritic schist
500107		8	14	6	0.27	Hangingwall side of
SKCIU/	including	8	10	2	0.44	pyritic schist
SRC108		20	22	2	0.11	Footwall side of pyritic schist
		11	12	1	0.14	Hangingwall side of pyritic schist
SRC109		29	30	1	0.11	Footwall pyritic zone of
		33	35	2	2.08	sericitic alteration
SRC111		20	23	3	0.16	Narrow pyritic schist
SRC113		62	64	2	0.70	Footwall pyritic zone associated with quartz veining
SRC114		37	38	1	0.12	Footwall side of pyritic schist
SRC117		20	21	1	0.13	Footwall side of pyritic schist
SDC119		33	40	7	0.14	Footwall side of pyritic
SRC118	including	37	38	1	0.30	schist

**Table 3.** Anomalous drill hole intersections from Dinner Creek Lode maiden drilling program.





Figure 7. Cross section 8800N showing drill hole SRC118 and anomalous gold intersections within very extensive alteration zone associated with the Dinner Creek Lode.



*Figure 8.* Cross section 9750N showing drill hole SRC109 and gold intersections within very thick alteration zone associated with the Dinner Creek Lode.



#### Gold Mineralisation Under Cover – Potential New Lodes

Recent detailed field mapping and consideration of historic soil sample geochemical data has identified anomalous of gold-in-soil concentrations located within extensive areas of shallow Tertiary cover (Figure 9). The anomalous zones are display a general arrangement that is consistent with the regional trend of the gold-mineralised structures.

The anomalous geochemical zones represent significant potential for the existence of previously unknown gold lodes. Significantly, the anomalous zones are located to the west and south of the Steam Engine lode, which may represent a more favourable part of the Steam Engine mineralising system for the development of gold-bearing lode structures.

A detailed ground magnetometer survey has been planned for the purpose of identifying the lode structures under recent cover sequences. The survey is currently on schedule to commence in late August 2021.



*Figure 9.* Plan showing anomalous gold-in-soil geochemical zones within Tertiary cover sequences to the west and south of the Steam Engine Lode. Historic soil samples with gold values colour coded are shown against field-mapped surface geology.



#### **About Superior Resources**

Superior Resources Limited (ASX:SPQ) is an Australian public company exploring for large lead-zinc-silver, copper, gold and nickel-copper-cobalt deposits in northern Queensland which have the potential to return maximum value growth for shareholders. The Company has a dominant exploration position within the Carpentaria Zinc Province, one of the world's richest mineral producing regions and is focused on multiple Tier-1 equivalent exploration targets.

**Reporting of Exploration Target:** Information contained in this report that relates to the reporting of Steam Engine Gold Project exploration results is based on information compiled by Mr Kevin Richter, an employee of Superior Resources Limited, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Richter has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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'. Mr Richter consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

**Reliance on previously reported information:** In respect of references contained in this report to previously reported Exploration Results or Mineral Resources, Superior confirms that it is not aware of any new information or data that materially affects the information, results or conclusions contained in the original reported document. In respect of previously reported Mineral Resource estimates, all originally reported material assumptions and technical parameters underpinning the estimates continue to apply and have not been materially changed or qualified. The form and context in which the relevant Competent Person's findings are presented have not been materially modified from the original document.

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# **APPENDIX 1**

# **REPORTED DRILL HOLE COLLAR DETAILS**

Holes	Easting (m)	Northing (m)	RL (m)	Depth (m)	Azimuth <sup>o</sup>	Dip <sup>o</sup>
SRC105	262208	7895861	560	93	108	-60
SRC106	263959	7895345	591	59	108	-55
SRC107	263895	7895049	595	69	108	-55
SRC108	263849	7894908	584	60	108	-55
SRC109	263864	7894798	576	60	108	-55
SRC110	263838	7894699	583	57	108	-55
SRC111	263752	7894621	582	60	108	-55
SRC112	263652	7894499	581	63	108	-55
SRC113	263601	7894410	583	78	108	-55
SRC114	263567	7894321	590	80	108	-55
SRC115	263552	7894216	582	80	108	-60
SRC116	263496	7894128	583	90	108	-55
SRC117	263457	7894035	577	80	108	-55
SRC118	263426	7893949	572	80	108	-55



# **APPENDIX 2**

# JORC Code, 2012 Edition – Table 1

#### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Historic Sampling</li> <li>Information relating to historical results relies on data contained in reports submitted to the Queensland Department of Natural Resources and Mines as part of the Company Report System attaching to the grant of Exploration Permits.</li> <li>The sampling techniques, where reported, used standard industry approaches.</li> <li>Whilst it is not possible to determine the reliability of historical assay results, no issues arose during compilation and interpretation of the results that would suggest that the assay results were not reasonable.</li> <li>Current Drilling</li> <li>Reverse Circulation (RC) drill samples are collected as drilled via a riffle splitter attached to the drill rig cyclone and collected as 1m riffle split samples. Approximately 1-3kg of sample was collected over each 1m interval used for assaying.</li> <li>The drill bit sizes used in the drilling were consistent in size and are considered appropriate to indicate the degree and extent of mineralisation.</li> <li>1m representative samples were assayed for gold at Intertek laboratories in Townsville.</li> <li>Samples with assays of 0.3 g/t Au and above were also submitted for multi-element assaying using a four-acid digest.</li> <li>Assaying for gold was via fire assay of a 50-gram charge.</li> <li>Sample preparation at Intertek laboratories in Townsville for all samples is considered to be of industry standard.</li> </ul>
Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g.	• Drilling from surface was performed using standard RC drilling techniques.



Criteria	JORC Code explanation	Commentary	
	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.).	<ul> <li>RC Drilling was conducted by AED (Associated Exploration Drillers) using an Ausrocl 4000 drill rig with 4 inch drill bit. Sampling was by the use of a face-sampling hamm bit.</li> </ul>	k ner
		• All holes were surveyed using a Reflex Gyro north-seeking gyroscopic instrument to obtain accurate down-hole directional data.	D
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul> <li>Sample recovery was performed and monitored by Terra Search contractor and Superior Resources' representatives.</li> </ul>	
	<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</li> </ul>	• The volume of sample collected for assay is considered to be representative of eac 1m interval.	:h
grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• The RC drill rod string delivered the sample to the rig-mounted cyclone which is se at the completion of each 1m interval. The riffle splitter is cleaned with compresse at the end of each 1m interval and at the completion of each drill hole.	aled d air	
Logging	• 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	<ul> <li>Geological logging was conducted during the drilling of each hole by a Terra Search geologist having sufficient qualification and experience for the mineralisation style expected and observed at each hole.</li> </ul>	ר י
<ul> <li>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>	• All holes were logged in their entirety at 1m intervals for the RC drill holes. A spear was used to produce representative samples for logging and chip tray collection.	r	
	<ul> <li>All logging data is digitally compiled and validated before entry into the Superior database.</li> </ul>		
		• The level of logging detail is considered appropriate for resource drilling.	
		• The RC Chip trays were photographed.	
Sub-sampling techniques	• If core, whether cut or sawn and whether quarter, half or all core taken.	• The sample collection methodology is considered appropriate for RC drilling and w conducted in accordance with standard industry practice.	ıas
<ul> <li>and sample preparation</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> </ul>	• The RC drill hole samples are split with a riffle splitter at 1m intervals as drilled. Spl metre samples are regarded as reliable and representative.	lit 1	
	<ul> <li>Approximately 1-3kg of sample was collected over each 1m interval.</li> </ul>		
	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	Samples were collected as dry samples.	



Criteria	JORC Code explanation	Commentary
	<ul> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Duplicate samples are taken and assayed in each batch processed for assaying</li> <li>The sample sizes are considered appropriate to the style of mineralisation being assessed.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>All samples were submitted to Intertek laboratories in Townsville for gold. Gold assays at or above 0.3 g/t were additionally assayed for a full suite of 33 additional elements using a four-acid digest.</li> <li>Samples were crushed, pulverised to ensure a minimum of 85% pulp material passing through 75 microns, then analysed for gold by fire assay method FA50/OE04 using a 50 gram sample.</li> <li>Multi-element analyses were conducted on assays of 0.5 g/t gold or above using a four acid digestion followed by an OES finish using method 4A/OE33 for the following 33 elements: Ag, Al, As, Ba, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sn, Sr, Te, Ti, Tl, V, W, Zn.</li> <li>Certified gold, multi-element standards and blanks were included in the samples submitted to the laboratory for QA/QC.</li> <li>Additionally, Intertek used a series of its own standards, blanks, and duplicates for the QC of the elements assayed.</li> </ul>
Verification of sampling and 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>The reported significant intersections have been verified by Terra Search and Superior Resources' geologists against the representative drill chips and the drill logs.</li> <li>No holes were twinned.</li> <li>Logs were recorded by Terra Search field geologists on hard copy sampling sheets which were entered into spreadsheets for merging into a central database.</li> <li>Laboratory assay files were merged directly into the database.</li> <li>The data is routinely validated when loading into the database.</li> <li>No adjustments to assay data were undertaken.</li> </ul>



Criteria	JORC Code explanation	Commentary
Location of 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 Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Drill hole collars have been recorded in the field using handheld GPS with three metre or better accuracy. The collar locations have been further defined using DGPS to give sub-one metre accuracy.</li> <li>Drill hole spacing and drilling technique are appropriate to establish the degree of geological and grade continuity for the mineral resources estimation procedures that will be applied. The mineralised system at Steam Engine remains open and further infill and depth and strike extension drilling is required to confirm the full extent of the mineralisation.</li> <li>The area is located within MGA Zone 55.</li> </ul>
		<ul> <li>Topographic control is currently from DGPS point data that has been merged with RL- adjusted contours.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drill hole spacing is variable at the Steam Engine project area, due to the different stages of the resource evaluation at the project. The drill hole spacing for the first pass at Dinner Creek was approximately 1 hole every 100 metres.</li> <li>The drill hole spacing is sufficient in the central portions of the Steam Engine deposit to allow estimation of resources when all the necessary information is compiled. An updated resource statement for the Steam Engine deposit will be carried out at the completion of the current exploration phase.</li> <li>Most intersections reported in this report are weighted composites of smaller sample intervals, as is standard industry practice.</li> </ul>
Orientation of data in relation to geological 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>	<ul> <li>The orientation of the drill holes is ideal for reporting of the intersection results.</li> <li>No orientation sample bias has been identified at this stage.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Sub-samples selected for assaying were collected in heavy-duty polyweave bags which were immediately sealed.</li> </ul>



Criteria	JORC Code explanation	Commentary	
		<ul> <li>These bags were delivered directly to the Intertek assay laboratory in Townsville by Terra Search or Superior Resources' employees.</li> </ul>	
		• Sample security measures within the Intertek laboratories are considered adequate.	
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	<ul> <li>No audits or reviews of the sampling techniques and data have been undertaken to date.</li> </ul>	

#### Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure 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>	<ul> <li>The areas reported for the Steam Engine lode lies within Exploration Permit for Minerals 26165 and is held 100% by Superior Resources. The areas reported for the Dinner Creek prospect lies within EPM 25659 and is held 100% by Superior Resource</li> <li>Superior Resources holds much of the surrounding area under granted exploration permits</li> <li>Superior has agreements or other appropriate arrangements in place with landholde and native title parties with respect to work in the area.</li> </ul>
		<ul> <li>No regulatory impediments affect the relevant tenements or the ability of Superior Resources to operate on the tenements.</li> </ul>
Exploration done by other	• Acknowledgment and appraisal of exploration by other parties.	• All historical drilling reported in this report has been completed and reported in accordance with their current regulatory regime.
parties	• Compilation in digital form and interpretation of the results of that work in digital fo has been completed by a Competent Person.	
Geology	• Deposit type, geological setting and style of mineralisation.	• The Steam Engine and Eastern Ridge gold deposits are hosted within shear zones. Th Dinner Creek mineralisation is similarly hosted within a shear zone.
		• The gold mineralisation occurs within a number of north-northeast trending, west- dipping pyritic quartz-muscovite-carbonate schist lodes within metamorphosed



Criteria	JORC Code explanation	Commentary
		intermediate to basic intrusives and metasediments. Significant chlorite–epidote and sericite type alteration zones exist in the shear zones, with the mineralisation appearing to be mostly linked with heavily sericite altered sections of the host rock.
		<ul> <li>The gold mineralisation phase itself consists of a mainly pyrite sulphide assemblage +/- minor arsenopryrite, pyrrhotite, and chalcopyrite (all fine grained).</li> </ul>
		• Several gold bearing lodes occur in the area, of which the Steam Engine Lode zone is the most notable. The Eastern Ridge Lode zone is located some 500m east of the Steam Engine Lode zone. The Southern Lode zone is located approximately 600m Southwest of the current Eastern Ridge mineral resource area and lies geologically inbetween the Steam Engine and Eastern Ridge lodes. The Dinner Creek shear zone is located some 2 kilometres south-east of the Steam Engine Lode zone and has very similar looking mineralisation and alteration to Steam Engine.
		<ul> <li>The lodes are typically interpreted as being of the mesothermal lode type. Recent studies undertaken by Superior Resources suggest the Steam Engine mesothermal gold mineralisation is most similar to orogenic style mineralisation.</li> </ul>
		• The important features of the lodes are their continuity and a persistent dip to the west.
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level) 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>	<ul> <li>Drill hole collar and significant intersection tables are included in the main body of the report. These tables include information relevant to an understanding of the results reported.</li> </ul>



Criteria	JORC Code explanation	entary	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> </ul>	ploration results ar ple intersections.	re reported as a length weighted average of all the assays of the
		o top cutting has be	een applied to the exploration results.
	<ul> <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> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	o metal equivalent	values are reported.
Relationship between mineralisation	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill</li> </ul>	or the Steam Engine ad drill holes which adths at or above 0.	Lode zone an interpreted westerly dip of approximately 50 to 60° generally dip to the east at around 60° (or less) result in near true 87 times the intersection lengths as reported.
widths and hol intercept • If it lengths len	nole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, There should be a clear statement to this effect (e.g. 'down hole length, true width not known').	or the Dinner Creek ill holes that genera above 0.9 times th	shear zone an interpreted westerly dip of approximately 45° and ally dip to the east at around 60° (or less) result in true widths at e intersection lengths reported.
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	cluded.	
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	eporting of all RC dr bove 0.4 g/t gold ha	ill holes with intersections for the Steam Engine deposit at or ve been included in tables within the report.
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	eliminary metallurg D20 by ALS Laborato L leaching. Six sam ade and considered the three main ore	gical leach test work was undertaken in October and November ories to confirm the amenability of the ore to conventional CIP / ple composites were generated from material which was of ore d representative of the ore to be mined, with two samples of each e zones.
		rind size for the test	t work was P80 (80% passing size of 75 microns).
		ie leach test condit	ions comprised souldin cyanide dosage of 1.5 kg/t, density of 40%



Criteria	JORC Code explanation	Со	Commentary	
			solids, pH of 10 to 10.5, with dissolved oxygen at 15 to 20 ppm.	
		•	Leach tests were run for 48 hours with a sample taken after 24 hours to assist in understanding the leach kinetics.	
		•	The results for the Eastern Ridge samples (5223045 and 5223046) were excellent with 97 and 98 percent of the gold being extracted respectively, and with virtually all of this extracted after 24 hours.	
		•	The results for the Steam Engine lode were lower with the average grade samples (5223044, 5223042 and 5223043) seeing total gold extraction of 84, 80 and 73 percent respectively.	
		•	At this stage, no test work has been done to investigate options to improve the gold recovery in the Steam Engine Lode samples.	
Further work	<ul> <li>The nature and scale of planned further work (e.g. 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>	•	An additional exploration drilling program is currently being planned for the deeper portions of the Steam Engine deposit.	
		•	Additional work for the pre-feasibility phase of the Steam Engine deposit includes:	
			Further Metallurgical studies;	
			Geotechnical studies;	
			Toll treating negotiations;	
			Preliminary mining and rehabilitation planning; and	
			Preliminary environmental studies.	