

HIGH-GRADE GOLD ZONE AT MORNING STAR HIGHLIGHTS MINE RE-OPENING POTENTIAL

Mantle Mining Corporation Limited (ASX: MNM) ('Mantle' or 'the Company') provides the following update on its strategy to develop the high grade Morning Star and Rose of Denmark gold mines in eastern Victoria.

Highlights

- The Company has completed a structural reinterpretation and meticulous historical review of the near surface high-grade Stacpoole zone in the Morning Star gold mine, with the following results:-
 - Stacpoole is a thick, continuous reef with excellent indications of unmined high grade gold mineralization,
 - It is now confirmed as one of the thickest reefs in the Morning Star system, with a target zone of 450 metres long by 60 metres wide,
 - This zone has seen little prospecting since 1900, as the shaft sunk in the 1930's did not cross the zone,
 - Every other vein of this thickness and areal extent in the mine has yielded substantial to exceptional high grade gold shoots after sufficient exploration,
 - Previous drillholes like MS357 (4.1 metres at 18.8 g/t gold including 0.3 metres at 216 g/t gold) as well as a number of other intercepts with visible gold, evidence the likely existence of high grade shoots in this near surface Stacpoole zone,
 - Existing adit and surface access makes the Stacpoole zone amenable to cost-effective development preparation, and ultimately mining, and
 - Mantle's geological team has identified the potential for additional discoveries from 2 level to the surface.
- Next steps include finalising initial exploration of this high grade Stacpoole zone, through commencement of an efficient drill program with access provided from four separate near-surface adits

"Every operator who has worked on the Morning Star Gold mine has eventually reached the realisation that Stacpoole is a very high quality development opportunity, although it has never been properly delineated and exploited" said Dr Rick Valenta, Executive Director of Mantle Mining. "We are proud to be the first to be able to identify the true potential of this high grade zone. It is easily accessed from existing adits and could be developed quickly, and therefore is our first priority at Morning Star".

Historical Context

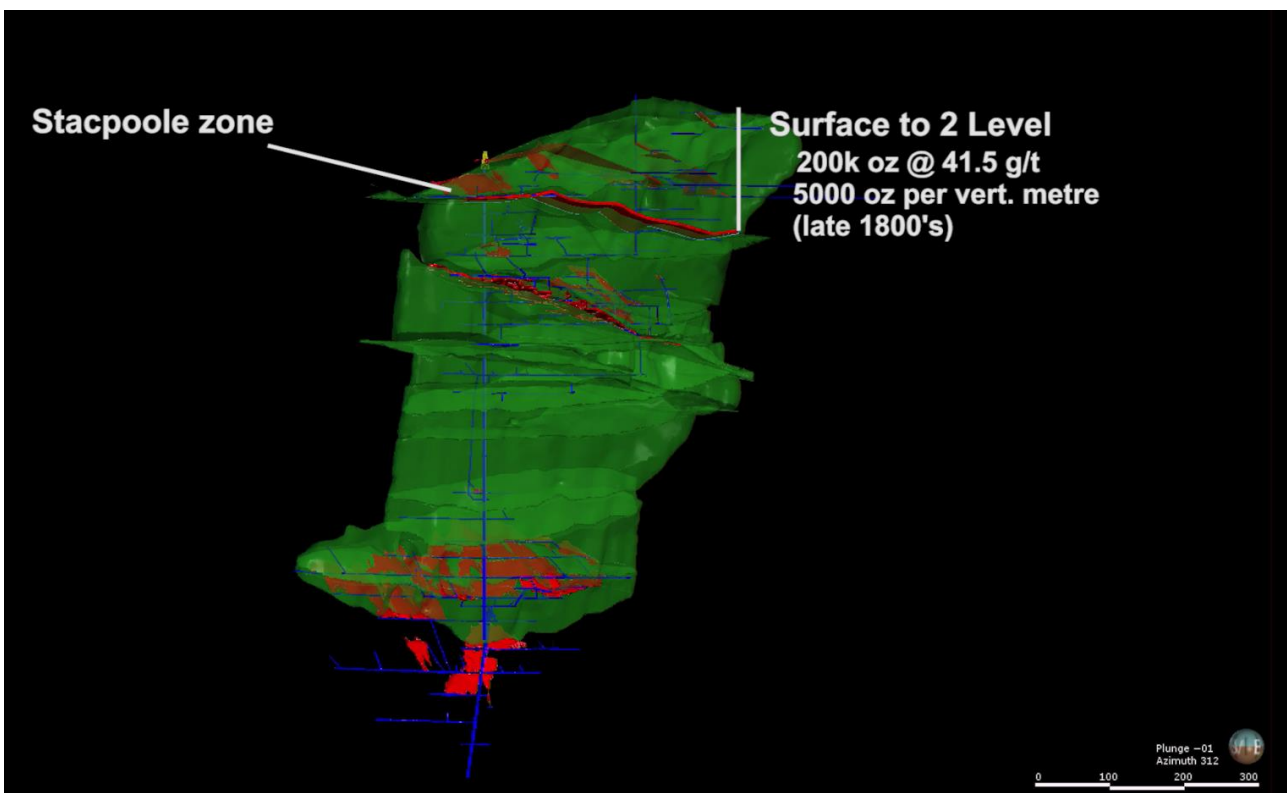
Mantle geologists have carried out a comprehensive review of data and historical references to the Stacpoole zone, concluding that it has been recognised as a high potential target for well over 100 years. However, this review also revealed a repeated history in which the Stacpoole zone was identified as a high priority target and then not followed up to mining stage, due to a number of

macro-economic factors preventing further fundamental geological analysis and/or sub-optimal workplans being developed. This zone provides an initial outstanding opportunity for Mantle.

The Stacpoole zone was first intersected in the late 1800's era, and marked the bottom of a zone between the surface and 2 Level which produced approximately 250,000 ounces at a grade of over 40g/t – the highest grams of gold per vertical metre in the mine (>5,000 oz per vertical metre). Mining was labour-intensive and piecemeal, with no single company controlling the operation. The cut-off grade at the time was well over 30 g/t gold.

The Stacpoole zone exposed in the Morning Star adit was not in a position which would be expected to be favourable, and development never reached the likely high grade target zone on the east side of the dyke – an area which Mantle has identified and is now focused on.

Figure 1. 3D view of the Morning Star mine 3D model looking west, showing the position of the Stacpoole Zone at the bottom of the zone from surface to 2 Level – the area of highest gold ounces per vertical metre in the mine.



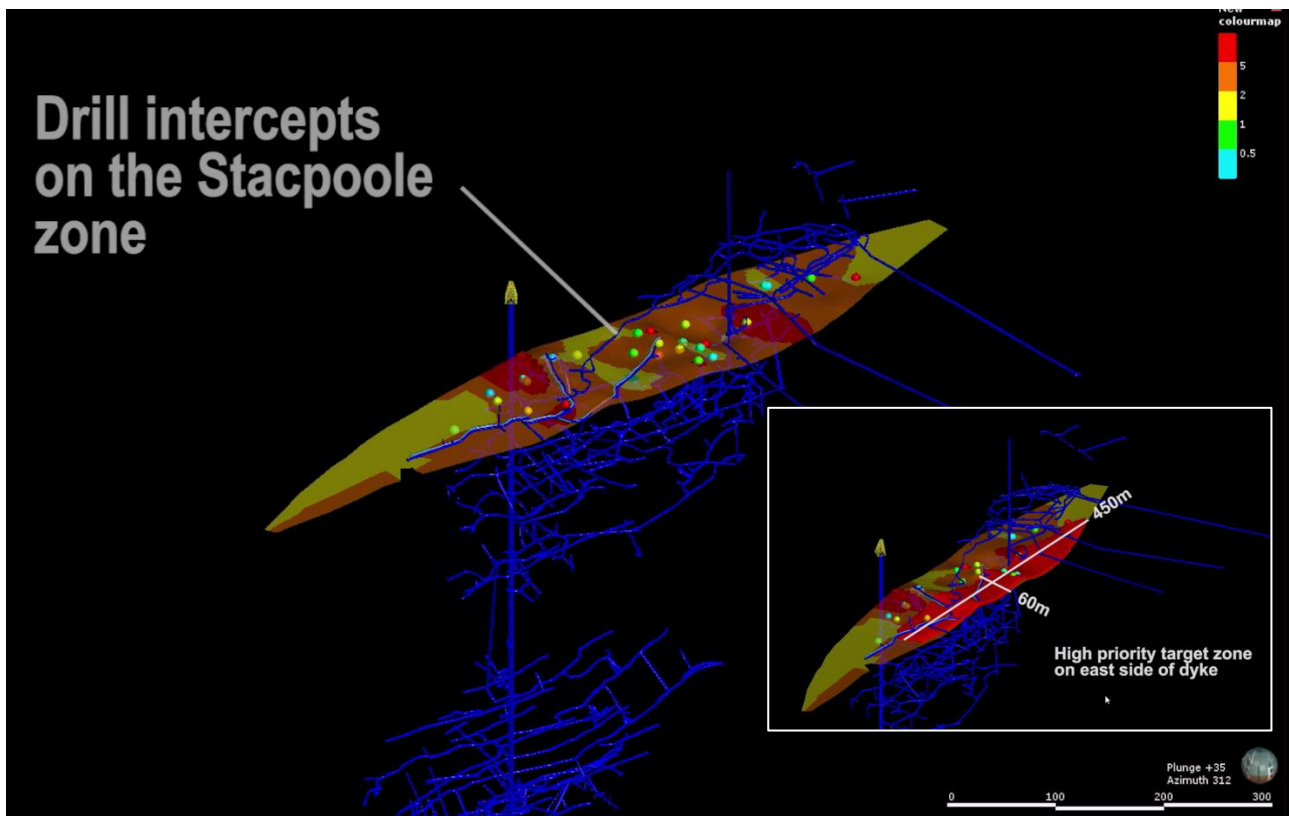
In 1907 the Director of the Geological Survey of Victoria recommended development to the eastern target zone of Stacpoole, but the development was never carried out. In 1932 the Stacpoole zone was recognised as a high priority target but was never developed, as work at the time was focused on the deeper areas from 4 Level to 8 Level which had been intersected by the new shaft. A Morning Star Mines NL report to shareholders in 1960 identified Stacpoole as a high priority target for development, but once again due to sub-optimal planning (by current standards), work at the time was focused on very deep levels and the now apparent shallow investigation was never carried out. A 1962 internal Directors' report to the board of Morning Star Mines NL also recommended development of the Stacpoole reef.

Finally, approximately 3 months after recommencement of mining in 2012, the Stacpoole zone (renamed to Donaldsons) was identified as a high priority target by Morning Star Gold NL and development was carried out to reach the reef. However, development commenced on the lower priority western side of the reef, where samples of up to 0.8m at 4.6g/t gold were collected, with operations ceasing thereafter.

Structural Reinterpretation

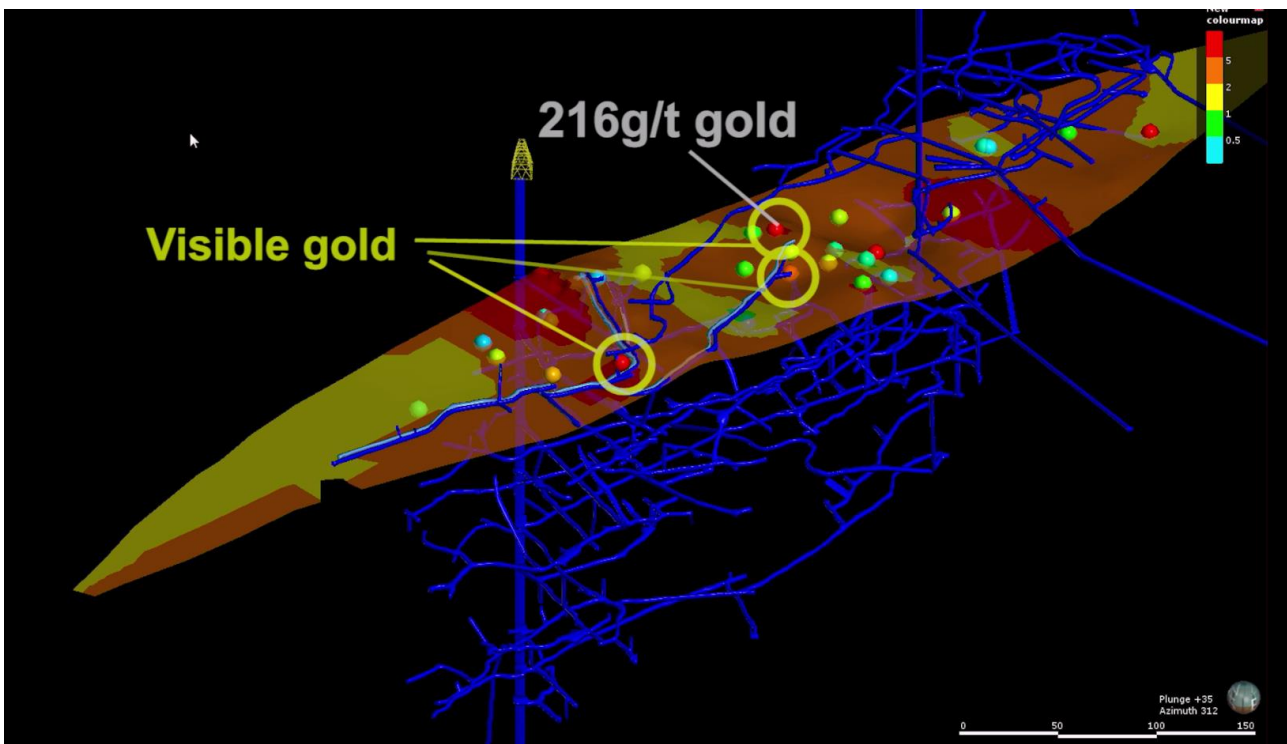
A compilation and analysis of all previous drilling by the new Mantle team has shown that the Stacpoole zone has been intersected in 28 drillholes as a recognisable compound zone of veining and has a maximum thickness of 8 metres and an average thickness of 3.4 metres. Sections show that the zone is nearly subhorizontal in sections perpendicular to the dyke, and shows a northward plunge of approximately 20 degrees. Displacement on Stacpoole reef has moved the upper dyke contact to the east, so the high priority dyke overhang area identified by Mantle is expected to be on the east side of the reef and extending out into the surrounding metasediments (as opposed to the previous attempted mining from the west). This target zone is 450 metres long by 60 metres wide.

Figure 2. Perspective view looking NW, showing the position of the Stacpoole zone and underground development at Morning Star. Colour contours of thickness show extensive areas of greater than 2 metres thickness for the mineralised zone. Inset shows the likely position of the high grade target zone for Stacpoole based on the geometry of the reef compared to known mineralised reefs.



Moderate to high grades are present in a number of drillholes at Stacpoole, with the highest result being **4.1 metres at 18.8 g/t gold** including **0.3 metres at 216 g/t gold** in drillhole MS357. Visible gold was noted in drillholes MS357, MS358 and MS359. The presence of visible gold in multiple drillholes within a thick vein sequence lends strong support to the hypothesis that the Stacpoole zone has great potential for definition of easily accessible high grade gold mineralisation at Morning Star.

Figure 3. Perspective view of Stacpoole showing the position of high grade intercepts and holes where visible gold was noted in drilling.



Next Steps

The company is continuing with mapping and sampling of the Stacpoole zone in the Morning Star adit under meticulous geological leadership. A drill program is being formulated to commence on the basis that the Stacpoole zone can be easily accessed with short drillholes from four separate existing near-surface adits, allowing for efficient testing of this Morning Star zone without any need to wait for shaft access.

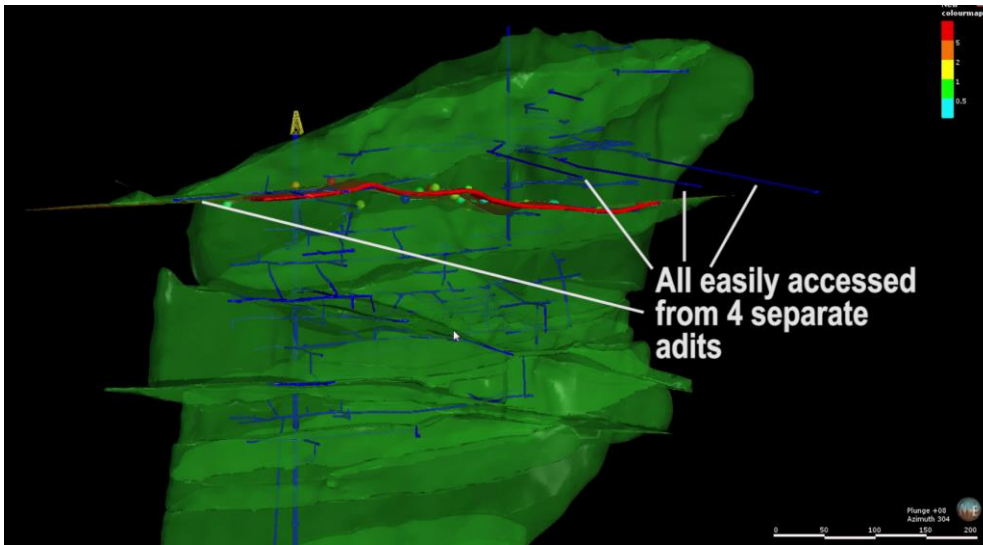


Figure 4.
Perspective view
showing the
location of
Morning Star
adits relative to
the Stacpoole
zone

About Mantle Mining:

Mantle is focused on the return to production of the Morning Star mine - **an advanced high-grade gold project, with significant infrastructure including processing plant, a strategic tenement footprint, and prospectivity, well positioned for near-term trial mining**

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Competent Persons Statement:

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Dr Richard Valenta, Executive Director of Mantle Mining Corporation Ltd. Dr Valenta is a Fellow of the Australasian Institute of Mining and Metallurgy and has sufficient experience 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". Dr Valenta consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Appendix One

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<i>Sampling techniques</i>	<ul style="list-style-type: none"> Nature and quality of sampling (eg 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. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple. 	<ul style="list-style-type: none"> The Morning Star deposit has been sampled by a mixture of diamond drill holes and underground face sampling. Detailed analysis has been carried out regarding the disparity between drilled gold grades and those associated with bulk sampling and production data, the later which are generally significantly higher than overlapping drill results Drill core is cut in half using a diamond saw (100% of core recovered) and half of the core is submitted for analysis. Sample intervals are generally based on lithology, as the mineralisation consists of multiple narrow veins within a diorite host. Samples can be as narrow as 10 cm, but are generally from 30cm to 1m. Face samples were taken with hammer and chisel. Vein material generally breaks away easily from the diorite host rock. Zones of mineralisation defined by epithermal veining and brecciation, plus or minus sulphides or iron oxides after sulphides, are sampled separately. The underestimation of gold grades in drilling in comparison to face sampling data and production data at Morning Star has been well documented (eg Goodz et al, 2008 – "Resource Estimation and Grade Assignment – A Comparison Between Historical Production and Current Maxwell Mining Validation Case Study at Morning Star Gold Mine, Woods Point")
<i>Drilling techniques</i>	<ul style="list-style-type: none"> Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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 style="list-style-type: none"> The Morning Star deposit has been an operating mine since the late 1800's. The bulk of the drilling was carried out by Gold Mines of Australia and subsequent operators, Short underground drillholes tend not to have survey information, but longer drillholes have surveys every 100ft (30m approx) Core orientations were not measured. Most of the drilling was carried out by company staff using company-owned drill rigs Approximately 467 diamond drillholes exist in the Morning Star drillhole database
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	<ul style="list-style-type: none"> The core is marked up and measured by senior field assistants and geologists. Core recovered (CR) is compared with the metres drilled (MD, recorded by the drillers in their 'run sheets') and a 'core recovery' percentage is calculated; $CR/MD \times 100 = \% \text{ recovered}$. For the face sampling it is difficult to accurately measure recovery, but it is estimated that >90% of the sample is recovered.
<i>Logging</i>	<ul style="list-style-type: none"> Whether core and chip samples have been 	<ul style="list-style-type: none"> Logs exist for all of the drillholes on the property. The long history of Mining and Exploration on the property has led to

Criteria	JORC Code explanation	Commentary
	<p><i>geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <ul style="list-style-type: none"> <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> <i>The total length and percentage of the relevant intersections logged.</i> 	<p>multiple sets of log codes, and the company is currently standardising this information</p> <ul style="list-style-type: none"> The logging describes the dominant and minor rocktypes, colour, mineralisation, oxidation, alteration, vein type, core recovery, basic structure (hardness has not been logged). Some geotechnical logging has taken place, though in most cases the existence of extensive underground development has meant that geotechnical work has been more focused on underground exposures
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> <i>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.</i> <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i> 	<ul style="list-style-type: none"> Core is sawn in half and one half (50%) is submitted for analysis. The 50% sampling of the core is considered appropriate for the mineralisation type; Core samples were assayed at the Gekko laboratory located in Ballarat, and at Onsite labs in Bendigo
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i> <i>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.</i> <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i> 	<ul style="list-style-type: none"> A blank sample, a standard sample and a duplicate sample are randomly inserted for approximately every 20 samples that are submitted. Analyses at Onsite labs were by 25g fire assay, and analyses at Gekko labs were by 50g fire assay. Both techniques are considered appropriate for this style of deposit
Verification of sampling and assaying	<ul style="list-style-type: none"> <i>The verification of significant intersections by either independent or alternative company personnel.</i> 	<ul style="list-style-type: none"> Higher sample values are subjected to re-assay All reported data was subjected to validation and verification prior to release

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. 	
Location of data points	<ul style="list-style-type: none"> 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. Specification of the grid system used. Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> All holes were picked up by surveyors The coordinates used are a local mine grid, rotated 48 degrees counterclockwise from true north The topography control is of a high standard
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied. 	<ul style="list-style-type: none"> Drilling has been carried out in fans from underground drill caddies. Reported drill holes are spaced at approximately 20 metres Larger reefs are relatively continuous over large distances, though smaller reefs can be more discontinuous The traditional approach in mining at Morning Star has been to use drilling to establish the width and position of mineralised structures, and to place more emphasis on underground sampling for establishment of gold grade Sample compositing has not been applied
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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. 	<ul style="list-style-type: none"> The drilling has been targeted to intersect mineralised veins at a steep angle, although some oblique holes have been drilled due to the locations of available drill sites. However, this has been taken into account in such a way as to eliminate sampling bias. No significant sample bias based on drill hole orientation is noted
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> The chain of custody for samples was managed by Morning Star Gold NL, with an established set of procedures designed to maintain sample security
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> No independent review has been undertaken of the announced drill results

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 style="list-style-type: none"> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding 	<ul style="list-style-type: none"> The Morning Star mine is located wholly within MIN5009. MIN5009 is 100% held by Morning Star Gold NL, in turn held 95% by Mantle There is a 1% Gross Sales Royalty for the first 5 years from first production

Criteria	JORC Code explanation	Commentary
	<p><i>royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></p> <ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> The assets were acquired from receivers in 2015, under a deal involving stages cash payments of \$3.75m, of which \$2m is still pending The Morning Star mine is located approximately 90km southeast of Mansfield in Eastern Victoria, near the town of Woods Point. The Rose of Denmark lies wholly within MIN5299 and is 49% held in JV with Shandong Tianye
Exploration done by other parties	<ul style="list-style-type: none"> <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<ul style="list-style-type: none"> The Morning Star Gold mine has been intermittently active since 1861, with a large number of owners and operators. The mine was operated by Gold Mines of Australia between 1930 and 1960, and then briefly operated by Morning Star Gold Mines NL until 1963. Production up to that point has been variably estimated to be between 630,000 and 830,000 oz Au at grades from 25-30 g/t Au. Mount Conqueror acquired the asset in 1993 and carried out exploration development under that name and then subsequently under the name of Morning Star Gold. The company went into suspension in June 2012 and receivership in 2014 There are historical workings of unknown age with open stopes and inclined shafts and drives in and around the mineralised quartz veins. The workings do not exceed a depth of ~20m.
Geology	<ul style="list-style-type: none"> <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> The project area lies within the Woods Point – Walhalla Synclinorium structural domain of the Melbourne zone, a northwest-trending belt of tightly folded Early Devonian Walhalla Group sandy turbidites. The domain is bounded by the Enoch’s Point and Howe’s Creek Faults, both possible detachment-related splay structures that may have controlled the intrusion of the Woods Point Dyke Swarm and provided the conduits for gold-bearing hydrothermal fluids. The local structural zone is referred to as the Ross Creek Faults Zone (RCFZ) Most gold mineralisation in the Woods Point to Gaffney’s Creek corridor occurs as structurally-controlled quartz ladder vein systems hosted by dioritic dyke bulges. Morning Star is the classic example of this mineralisation style.
Drill hole Information	<ul style="list-style-type: none"> <i>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:</i> <ul style="list-style-type: none"> <i>easting and northing of the drill hole collar</i> <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> <i>dip and azimuth of the hole</i> <i>down hole length and interception depth</i> <i>hole length.</i> 	<ul style="list-style-type: none"> Refer to tables 1 and 3
Data aggregation	<ul style="list-style-type: none"> <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or</i> 	<ul style="list-style-type: none"> In all previous ASX releases the assays are given ‘un-cut’ unless otherwise stated & weighted averaging of results is used:

Criteria	JORC Code explanation	Commentary
methods	<p><i>minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <ul style="list-style-type: none"> • <i>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.</i> • <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<p>in which the average grade is the sum of the products of length and grade for each sample in the interval, divided by the total length of the interval. A nominal cutoff of 1g/t is used for identification of potentially significant intercepts for reporting purposes.</p> <ul style="list-style-type: none"> • Most of the reported intercepts are shown in sufficient detail, including gold maxima and subintervals, to allow the reader to make an assessment of the balance of high and low grades in the intercept. • Metal equivalents are not used.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> • <i>These relationships are particularly important in the reporting of Exploration Results.</i> • <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> • <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i> 	<ul style="list-style-type: none"> • Mineralised structures at Morning Star are variable in orientation, and therefore drill orientations have been adjusted from place to place in order to allow intersection angles as close as possible to true widths. • Exploration results have been reported as an interval with 'from' and 'to' stated in tables of significant economic intercepts. Tables clearly indicate that true widths will generally be narrower than those reported. • An estimate of true width can be made based on the known strike of mineralised quartz veins or quartz breccias, although it should be noted that these features are not absolutely planar and anastomosing does occur, with variable strike and dip.
Diagrams	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • See Tables 2 and 4 and figures 1 to 6
Balanced reporting	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • Every drillhole completed on the property has been reported, regardless of whether it has returned high or low grades. Higher grade drillholes are reported with significant detail, while lower grade drillholes generally have fewer reported intercepts. Holes with no economically significant intercepts are reported as such in each release of results, with the label "No Significant Intercept".
Other substantive exploration data	<ul style="list-style-type: none"> • <i>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</i> 	<ul style="list-style-type: none"> • Results of an ongoing structural reappraisal of the mine are presented in some of the diagrams in this release

Criteria	JORC Code explanation	Commentary
	<i>deleterious or contaminating substances.</i>	
Further work	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> Further exploration drilling from surface and underground is planned, along with face sampling in order to gain confidence regarding grades

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Section 3 does not pertain to this report.

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Section 4 does not pertain to this report.