RAMELIUS

ACN 001 717 540 ASX code: RMS

09 November 2020

DIRECTORS

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RAMELIUS RESOURCES LIMITED

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ISSUED CAPITAL Ordinary Shares: 808M

Penny Feasibility Study (Mt Magnet)

HIGHLIGHTS

09 November 2020

- AISC cost reduced to A\$633/oz (PFS: A\$703/oz)
- Upfront capital cost increased to A\$34.5M (PFS: A\$23.5M) due largely to re-allocation from operating costs to capital

RELEASE

- Metallurgical Recovery increased to 95% (PFS: 92%)
- NPV_{5%} of A\$301M @ A\$2,300/oz, IRR 240%, Payback of 26 months
- Board approval to commence project development (refer Table 5)

PENNY & EDNA MAY STUDY UPDATES

- Mining commencement late June 2021 Quarter (PFS: Sep 2021 Qtr)
- Edna May Underground Study
 - Mineral Resource updated to be:
 - 31,000,000t @ 1.1g/t for 1,000,000oz (total resource)
 - With high-grade lodes sub-total of: \cap
 - 490,000t @ 4.5g/t for 72,000oz (high-grade lodes)
 - New Mineral Resource 22% larger than previous \cap
 - o Option study for bulk underground versus narrow vein mining is progressing, and will also include consideration of Stage 3 open pit and potential interaction

Ramelius Resources Limited (ASX:RMS) ("Ramelius", "the Company") is pleased to provide the results of the Penny Feasibility Study (Mt Magnet) and consequentially the Board's approval to expedite the Project's development. Also provided is an updated Mineral Resource at Edna May and associated underground and open pit mining study status, all within its portfolio of projects in Western Australia (refer Figure 9).

As a result of compelling financial outcomes from the Penny Feasibility Study, the Company has also approved a Decision-to-Mine to bring the project into production in the June 2021 Quarter, slightly earlier than contemplated by the Prefeasibility Study. Part of the decrease in AISC and increase in upfront capital is associated with allocation of costs from a "first ore" to a "commercial production" basis. This has also resulted in some of the upfront capital being brought forward into the second half of FY2021, earlier than previously anticipated (refer Table 5 - FY2021 Group Capital Expenditure).

At Edna May, infill and extensional diamond drilling has been completed and the resource model updated, with the revised Mineral Resource significantly larger than previous. Progress of the underground bulk versus high grade only mining study has continued although it is apparent that any decision to change from the current high grade lode mining method is best considered alongside the potential Stage 3 open pit study. For this reason, both underground and open pit studies will be reported on after their completion by the end of December 2020 Quarter.

PENNY GOLD PROJECT (WA) - FEASIBILITY STUDY RESULTS

Summary

Ramelius is pleased to provide the results of its Penny Feasibility Study for the development of the project located approximately 20km south of Youanmi or 170km by road south east of Mt Magnet in Western Australia. The Feasibility Study results are compared to the Pre-Feasibility Study, released to the ASX on 30 June 2020, in Table 1 below.

Parameter	Unit	Pre-Feasibility Study	Feasibility Study (October 2020)
General		(00110 2020)	
Start Date (open pit cut-back)	Qtr	September 2021 Quarter	Late June 2021 Quarter
Initial life	Yrs	3.8	3.8
Mining (open pit)			
Ore tonnes (high grade)	kt	13	13
Grade	g/t	5.1	5.1
Contained Gold	koz	2	2
Mining (underground)			
Ore tonnes (high grade)	Mt	571	571
Grade	g/t	13.3	13.5
Contained Gold	koz	248	248
Processing			
Ore processed	Mt	584	584
Grade	g/t	13.3	13.3
Gold fed	koz	250	250
Recovery	%	92	95
Gold Production	koz	230	238
Financial			
Upfront Capital Cost	A\$M	23.5	34.5
AISC	A\$/oz	703	633
Pre-tax NPV _{5%} @ A2,300/oz	A\$M	Not reported	301
IRR	%	Not reported	240
Payback	Mths	Not reported	26

Table 1 - Penn	y Gold Projec	t Comparative	Study	Summary	y 1
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¹ The Feasibility Study is a Production Target that contains a small proportion of Inferred Resources (9%). There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

Geology and Mineralisation

Host stratigraphy for the deposit is a sequence of steeply dipping mafic and ultramafic rocks with minor felsic intrusives. Gold mineralisation is associated with steeply east dipping, quartz-sulphide veins typically 2m to 5m in width. These quartz lodes are visually distinct and typically display sharp boundaries to the mineralisation.

The quartz veins are variably massive, laminated or brecciated with a highly variable sulphide assemblage of pyrite, pyrrhotite, galena, chalcopyrite and sphalerite. Some sulphide zones are semi-massive and can comprise 50-90% sulphide. Visible gold can be seen proximal to galena and sphalerite. Pb anomalism is significant with lode Pb grade up to 2%. Silver grade is also significantly higher than typical Archaean lode gold deposits.

A Ramelius Mineral Resource was generated in May 2020. The Penny West and North lodes are defined by 94 RC and 22 diamond drill holes for a total of 22,468m, the majority of which were angled at -60° to grid west (MGA94). All holes in the Penny North lode were completed by Spectrum Metals Ltd in 2019.



A separate small resource model was generated for the Magenta deposit using the same methodology and included 20 new Ramelius RC infill holes.

Figure 1 - Penny West (left) and North (right) long section – Model by Au grade

Table 2 – Penny Mineral Resource ² >2.	0g/t Au
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Lodo	Indicated			Inferred			Total		
Loue	tonnes	g/t	ounces	tonnes	g/t	ounces	tonnes	g/t	ounces
Penny North	360,000	21.2	240,000	61,000	13.0	26,000	420,000	20.0	270,000
Penny West	43,000	7.2	9,800	47,000	6.1	9,400	90,000	6.6	19,000
Magenta	19,000	4.0	2,500	92,000	2.5	7,300	110,000	2.7	9,800
Total	420,000	19.0	260,000	200,000	6.6	42,000	620,000	15.0	300,000

Figures rounded to 2 significant figures. Rounding errors may occur.

Geotechnical

Assessed ground conditions have been determined from observations of the current Penny West Pit, geological interpretation, geotechnical logging of 6 diamond holes and physical properties obtained from laboratory tests on the core.

Ground conditions in the footwall and orebody are expected to be good. The only poor domain was identified in ultramafic rocks in the hangingwall. Fortunately, the ultramafic is interpreted to be at least 20m into the hangingwall of the Penny North underground mine and on this basis should not adversely affect mining activity.

² See RMS ASX release, 'Ramelius Extends Life of Mine Plan by 34% to 1.45Moz', 30 June 2020.



Figure 2 - Penny North interpreted geology cross section looking north (6807125mN)



Figure 3 - Penny West open pit looking south

Hydrology

The existing pit lake (approximately 25,000 TDS) within the existing Penny West Pit will serve as the main source of initial water for dust suppression during the open pit phase. Drilling for water bores to identify long term make up water has already commenced. A recently drilled hole between Magenta and Penny West has yielded encouraging volumes of water (≈5,000 TDS) and is likely to be used to top up water supply for underground mining water and for use as the primary supply for the camp and ablutions. Future drill programs will continue to focus on the search for additional sources to further reduce risk.

Mining

The primary initial focus will be excavation of a 736,000bcm cutback on the existing Penny West pit to facilitate portal development in fresh rock from a position in the pit which is safely accessible. The cutback design incidentally allows recovery of 1,200t @ 15.5g/t of inferred ore. The Penny West cutback design is shown in Figure 4 below.



Figure 4 – Penny West Pit Cutback Design

Penny North Underground Mine and will be accessed from the Penny West Pit and will ultimately be mined to a depth of 180mRL (~315m below surface). Production levels will be spaced 20m floor to floor. Ore drives will be developed to a height of 4.5m, resulting in production drill holes up to 20m in length. All holes are planned to be 76mm up holes.

In order to approach 100% extraction, backfilling of voids will be required. The proposed method is already deployed at the Vivien mine with Cemented Rock Fill (CRF) in every second level. CRF will use development waste material, this material generally has a particle size distribution that provides the fill with the required strength without further crushing or screening. Where possible, development waste rock will be trucked directly to "backfill" stockpiles to limit haulage of waste rock to the surface and back. Using CRF, every second production level (primary level) would be completely backfilled with the intermediate (secondary) levels remaining open with small island pillars left in-situ to provide support to the hanging wall.

The Penny West mineralisation left below the pit is generally thinner than Penny North and consequently has not been included in the current mine plan at this stage. Further drilling and evaluation of Penny West is expected during operations. A long section of the Penny North mine design is shown in Figure 5.



Figure 5 – Penny North mine design with grey stopes to contain CRF, pink representing up-hole secondary stopes

The underground schedule is based upon a single jumbo developing at a maximum rate of 260m per month and a maximum stoping rate of 11,000t of stope ore per month from a level with each level having 2 production fronts.

The Penny Ore Reserve has been generated by standard design and evaluation processes using input appropriate to this level of study including dilution, recovery, cut-off grade and economic factors to meet JORC 2012 reporting criteria. It comprises of the Mining Inventory based on Indicated Resource. Ore Reserve is detailed in Table 3.

Table 3 – Penny	North & Magenta	Ore Reserve ³

Category	Tonnes	Grade	Ounces
	t	g/t	ΟZ
Probable	500,000	14.0	230,000

Figures rounded to 2 significant figures. Rounding errors may occur.

Metallurgy

It is planned for the Penny Project ore to be processed through the Mt Magnet Processing Plant as part of an overall feed blend. Test work has shown that high metallurgical recoveries can be achieved at the current processing grind size of nominally 175µm.

No capital modifications to the processing facility are required in order to process the Penny gold ores. Penny ores are marginally softer and the gravity circuit has been demonstrated to have a capacity well above the calculated gravity gold recovery in the Penny feed blend, and the overall gold production is below peak gold production. It should be noted that a separate study is being undertaken by Ramelius looking to expand plant capacity as a standalone project. This study would also consider any implications of the Penny ores in the feed blend.

The metallurgical modifying factors used for the Penny Feasibility Study can be summarised as:

- Gold recovery: 95%
- Throughput: 1.9-2.0 Mtpa
- Operating cost: A\$20.50/t

The Mt Magnet processing plant is a conventional CIL/CIP gold plant with single stage crushing, primary SAG milling in closed-circuit with a pebble crusher, and secondary closed-circuit ball milling. A centrifugal style gravity gold recovery circuit operates on a portion of the secondary milling product hydrocyclone underflow. Gravity gold concentrate is intensively leached. Cyanide leaching on the classified mill product is undertaken through two large, agitated leach tanks, two large, agitated adsorption tanks and three (of six) older Pachuca style (air agitated) adsorption tanks. Leach kinetics are improved through the addition of oxygen through the first leach tank stages of the circuit. Gold is eluted from the loaded activated carbon, it is then electrowon, calcined and smelted into gold doré as is standard practice.

The prefeasibility and feasibility testwork has been undertaken in two rounds. The first was done on six variability samples; one oxide sample from the Magenta proposed open pit deposit and five fresh samples from the proposed Penny underground deposit. Five of these were from reverse circulation (RC) drill holes and one was a diamond drill (DD) hole sample. A second round of variability testwork was undertaken on an additional five fresh Penny underground samples to further improve the understanding of the variability in the metallurgical behaviours. This has been undertaken on four RC hole samples and one additional diamond drill hole (see summary results for these samples below, along with the original two results from Spectrum Metals - SPX).

The samples tested are all within the Ore Reserve and the probable mining inventory. They have been selected as spatially representative lode intervals throughout the deposit. A single sample from the Magenta prospect (proposed shallow open pit) was selected to verify the metallurgical behaviour of the oxide ores.

Based on the metallurgical testwork, a gold recovery of 95% has been selected for the feasibility study mine optimisation and financial modelling. The recovery is based on the average of the gravity and 24-hour leach recoveries at a grind size of 150 - 175 μ m. The 24-hour value better reflects the residence time of the Mt Magnet processing plant (18 – 20 hours). As might be expected, testwork for 48-hour leach and 125 μ m grind size generated slightly higher recoveries.

Element	Unit	Comp.	Comp.	Comp.	Comp.	Comp.	Comp. A	Comp. B
		#7	#8	#9	#10	#11	(SPX)	(SPX)
Gravity Recovery	Au %	76.1	85.0	82.3	88.7	64.1	76.90	10.60
Solution Recovery	Au % (24h)	19.0	11.5	11.0	7.9	19.1	22.30	88.50
Total Recovery	Au % (24h)	95.1	96.4	93.2	96.6	83.2	99.20	99.10
Calculated Au grade	ppm	17.32	43.95	29.30	14.52	34.04	24.59	23.30
Tails Solids	ppm	0.77	0.98	1.74	0.23	5.31	0.21	0.22
Diagnostic leach cyanidable gold	%	99.1	99.8	98.9	99.7	99.9	N/A	N/A
Cyanide consumption	kg/t	1.4	1.3	1.0	1.4	1.0	N/A	N/A
Lime consumption	kg/t	1.3	0.9	0.9	1.0	0.6	N/A	N/A
Grind size	um	175	175	175	175	175	150	150
Sample Depth	m	338	264	268	204	140	135	143

Infrastructure and Site Layout

The proposed infrastructure required for the Penny Gold Project is shown in Figure 6.



Figure 6 – Penny Site Layout (covering Mining Leases only)

Project Implementation

The project implementation schedule is shown below in Figure 7.



Figure 7 – Penny Project Implementation Schedule

Financial Analysis

The high grade Penny project will generate significant financial returns at the modelled gold price of A\$2,300/oz and current spot prices of approximately A\$2,650/oz. At an assumed price of A\$2,650/oz, the project generates an AISC margin of just over A\$2,000 per ounce. Table 4 below summarises some key financial data for both gold price assumptions.

Financial Parameter	Unit	Feasibility Study	Feasibility Study
		(A\$2,300/oz)	(A\$2,650/oz)
Upfront Capital Cost	A\$M	34.5	34.5
AISC	A\$/oz	633	641
Undiscounted Free Cash Flow	A\$M	361	442
NPV _{5%}	A\$M	301	370
IRR	%	240	291
Payback	Mths	26	25

Table 4 - Financial Results

When the Company released its Life of Mine plan in June 2020, the development expenditure for Penny was assumed to be incurred in the FY2022 financial year. With the expedited approval of the development of the project, the Group Capital expenditure for FY2021 can now be updated as shown below, which brings forward A\$15.9M from FY2022 into FY2021 (timing adjustment only). This additional expenditure in FY21 will be funded from the Company's own balance sheet.

Table 5: FY2021 Group Capital Expenditure

Project (A\$M)	Sept 20 Qtr (Actual)	Dec 20 Qtr (Forecast)	Mar 21 Qtr (Forecast)	Jun 21 Qtr (Forecast)	FY2021 (Forecast)
Mt Magnet pit development (Eridanus & Brown Hill)	14.9	15.4	0.6	0.5	31.4
Marda open pit	0.4	1.6	-	-	2.0
Tampia open pit (project development)	1.6	17.6	7.8	0.3	27.3
Penny underground (project development)	-	-	4.0	11.9	15.9
Sub Total – Development Capital	16.9	34.6	12.4	12.7	76.6
Exploration & resource definition (all projects)	4.4	6.8	7.3	6.9	25.4
TOTAL	21.3	41.4	19.7	19.6	102.0

Key sources of cost estimates include current open pit and underground contract mining rates from existing Ramelius sites of similar size, third party vendor quotes, recent internal capital expenditure and existing internal Ramelius operating costs:

Key differences between from the Prefeasibility Study to the Feasibility Study include:

- Metallurgical recovery increasing from 92% to 95% following completion and analysis of metallurgical test work, increasing gold production from 230koz to 238koz and revenue from A\$530M to A\$547M;
- Increased detail of underground operating costs (refinement) including a reduction in direct underground costs from A\$90.3M to \$86.6M;
- Increase in the processing costs from A\$20.0/t to A\$20.50/t;
- Mine operating cash flow has increased from A\$361M to A\$380M;
- The increase in up front capital is largely based on moving costs from operating to upfront capital, based on commercial production levels as opposed to first ore. Total operating and capital costs (excluding royalties) have risen A\$0.4M, which is an increase of only 0.2% on the PFS cost estimates; and
- Key non-financial changes include aspects such as successful hydrological drilling for water sources and completion of the lease-wide heritage survey.

EDNA MAY UNDERGROUND - UPDATED MINERAL RESOURCE & MINING STUDY

Location & Project History

The mine is located adjacent to the town of Westonia in Western Australia, 315km east of Perth. Significant historic underground mining occurred between 1911 – 1947. Modern open pit and underground mining has taken place from 1984 to 1998 and then from 2010 to present. The deposit has produced over 1 million ounces.

Geology and Mineralisation

The deposit is well understood geologically. The Edna May Gneiss (EMG) is a metamorphosed tonalitic granitoid within a mafic-ultramatic stratigraphy. It hosts the gold mineralisation which occurs as sheeted quartz, minor sulphide veining, generally parallel to strike and less frequent larger quartz lodes/reefs which cross-cut the gneiss with a more northerly strike and westerly dip. The gneiss strikes east-west (100-120°) and dips at 50-60° to the north. It has a strike length of 1,000m, a width of 50–150m and depth extent of at least 700m. Significant background Au anomalism (0.1 - 0.5 g/t) is present, associated with alteration intensity, proximity to veining and micro-fracturing. Visible gold is frequently seen in drill core in close association with veining and gravity recovery is very high for a low-grade deposit at around 50%.

Mineral Resource

Table 6 - Total Mineral Resource Summary

	Indicated			Inferred			Total Resource		
Deposit	Tonnes	Au	Au	Tonnes	Au	Au	Tonnes	Au	Au
	t	g/t	ΟZ	t	g/t	ΟZ	t	g/t	οz
Edna May	24,000,000	1.1	810,000	7,100,000	1.0	240,000	31,000,000	1.1	1,000,000

Figures rounded to 2 significant figures. Rounding errors may occur.

Mineral Resource Commentary

The drilling dataset and resource modelling methodology continues the methodology established by Ramelius since acquisition of the mine in late 2017. This essentially comprises of composited, topcut grade domains, OK estimation within the broader EMG domain and ID2 estimation within narrow lode domains.

The October 2020 model update changes include:

- new infill & extensional UG diamond drilling 75 holes for 7,390m. Mostly targeting the Jonathan & Fuji quartz reef lodes down-dip
- depletion of underground mining to September 2020
- extension of the Indicated and Inferred limits, reflecting additional drill density and higher gold price

Maximum depth of Indicated category is 480m and 540m for Inferred. While deep for a bulk low grade resource this is not far below current optimisation shells and nominal Stage 3 pit designs. The Edna May resource has been generated for evaluation by open pit as well as selective and bulk underground mining techniques and is reported above a 0.5 g/t Au cut-off. The high grade quartz lode resource component, included in the total Edna May resource above, is:

			,						
	Indicated			Inferred			Total Resource		
Deposit	Tonnes	Au	Au	Tonnes	Au	Au	Tonnes	Au	Au
	t	g/t	οz	t	g/t	οz	t	g/t	oz
Lodes	430,000	4.3	60,000	68,000	5.5	12,000	490,000	4.5	72,000

Table 7 – Lodes Mineral Resource Summary

Figures rounded to 2 significant figures. Rounding errors may occur.



Figure 8 - Edna May cross section looking east, drilling & block model by Au

MINING/PROCESSING STUDIES

Progress on the various studies, based around the Mt Magnet and Edna May production centres, continues as shown below in Table 8).

Table 8: FY2021 Mining/Processing Studies

Site	Study Description	Est. Completion
Mt Magnet	Penny Gold Project Feasibility Study	Completed
Mt Magnet	Eridanus underground: completion of deeper drilling & associated Scoping Study	31 December 2020
Mt Magnet	Processing Facility Upgrade: carry out cost/benefit analysis on upgrade from 2.0 to 2.4Mtpa	31 December 2020
Mt Magnet	Mt Magnet Undergrounds: complete extension drilling & evaluation at Shannon/Hill 60/WTH Galaxy (Saturn, Mars, Titan, Hill 50): underground studies to convert a % of ~470koz mineral resource Morning Star: underground study to convert a % of ~80koz mineral resource	30 June 2021
Edna May	Underground: bulk underground option versus the current high-grade lode only mine plan Stage 3 Open Pit: re-visit large cutback on the original Stage 2 open pit, based on the updated resource model and considered in conjunction with the Underground Study above	31 December 2020

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ABOUT RAMELIUS

Ramelius Resources Limited (ASX:RMS) is a Western Australian gold producer that has been listed on the ASX since 2003 and in production since 2006. Ramelius owns and operates the Mt Magnet, Edna May, Vivien and Marda gold mines and owns a 90% interest in the Tampia Hill gold project, all in Western Australia (refer Figure 9).

Ore from the high-grade Vivien underground mine, located near Leinster, is trucked to the Mt Magnet processing plant where it is blended with ore from both underground and open pit sources. The Edna May operation currently processes ore from its underground and open pit operations as well as hauled ore from the Marda gold mine.



Figure 9 - Ramelius' Production Centre and Development Project locations

FORWARD LOOKING STATEMENTS

This report contains forward looking statements. The forward looking statements are based on current expectations, estimates, assumptions, forecasts and projections and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date such statements are made, but which may prove to be incorrect. The forward looking statements relate to future matters and are subject to various inherent risks and uncertainties. Many known and unknown factors could cause actual events or results to differ materially from the estimated or anticipated events or results expressed or implied by any forward looking statements. Such factors include, among others, changes in market conditions, future prices of gold and exchange rate movements, the actual results of production, development and/or exploration activities, variations in grade or recovery rates, plant and/or equipment failure and the possibility of cost overruns. Neither Ramelius, its related bodies corporate nor any of their directors, officers, employees, agents or contractors makes any representation or warranty (either express or implied) as to the accuracy, correctness, completeness, adequacy, reliability or likelihood of fulfilment of any forward looking statement, or any events or results expressed or implied in any forward looking statement, except to the extent required by law.

COMPETENT PERSONS

The information in this report that relates to Mineral Resources and Ore Reserves is based on information compiled by Rob Hutchison (Mineral Resources) and Duncan Coutts (Ore Reserves), who are Competent Persons and Members of The Australasian Institute of Mining and Metallurgy. Rob Hutchison and Duncan Coutts are full-time employees of the company. Rob Hutchison and Duncan Coutts have 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". Rob Hutchison and Duncan Coutts consent to the inclusion in this report of the matters based on their information in the form and context in which it appears.

Attachment A: JORC Table 1 Edna May Resource

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	 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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information. 	 Sampling gold was conducted using 1m intervals collected from reverse circulation (RC) drill holes. Surface and underground diamond holes may be sampled along sub 1m geological contacts, otherwise 1m intervals are the default. Drill hole locations were designed to allow for spatial spread across the interpreted mineralised zone. All RC samples were collected and split to 3-4kg samples on 1m metre intervals. Diamond core is half cut along downhole orientation lines. Half core is sent to the laboratory for analysis and the other half is retained for future reference. Standard fire assaying was employed using a 50gm charge with an AAS finish for all diamond, RC and RAB samples.
Drilling techniques	 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). 	 Diamond drilling used NQ diamond core. RC drilling was completed using 5 ¾" face sampling RC drilling hammers. RAB holes were completed using 4" blade bits or hammers.
Drill sample recovery	 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. 	 All diamond core is jigsawed to ensure any core loss, if present is fully accounted for. Recovery is generally excellent. RC primary, duplicate and total sample was weighed and graphed at the rig to check sample recovery and interval accuracy. Any wet, contaminated or poor sample returns are flagged and recorded in the database to flag potential sampling bias. Zones of poor sample return both in RC are recorded in the database and cross checked once assay results are received from the laboratory to ensure no misrepresentation of sampling intervals has occurred.
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 metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	 Samples are geologically logged on site by geologists. Details on the rock type, mineralogy, fabrics and textures are recorded. Drill hole logging is qualitative on visual recordings of rock forming minerals and on estimates of mineral abundance. Additionally a downhole Televiewer collected structural information including contacts, folications, banding and veining and a geophysical tool collected gamma density and magnetic susceptibility measurements. All core photographed wet & dry prior to cutting The entire length of each drill hole is geologically logged.

Sub-sampling techniques and sample preparation	 If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all subsampling stages to maximise representivity of samples. 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. Whether sample sizes are appropriate to the grain size of the material being sampled. 	 Core samples were sawn and half core sampled. RC 1m samples are split using a rig mounted cone splitter. All samples are pulverized prior to splitting in the laboratory to ensure homogenous samples with 85% passing 75um. 200gm is extracted by spatula that is used for the 50gm charge on standard fire assays. Significant numbers of mineralised duplicate samples were selected based on Arsenic grade (by handheld pXRF analysis) and submitted. Analysis of duplicates shows good quality. The sample size is considered appropriate for the type, style, thickness and consistency of mineralization.
Quality of assay data and laboratory tests	 The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. 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. 	 The fire assay method is designed to measure the total gold. The technique involves standard fire assays using a 40gm sample charge with a lead flux (decomposed in the furnace). The prill is totally digested by HCl and HNO3 acids before measurement of the gold determination by AAS. No field analyses of gold grades are completed. Quantitative analysis of the gold content is undertaken in a controlled laboratory environment. Industry best practice was employed with the inclusion of duplicates and standards. Standards and blanks are interrogated to ensure they lie within acceptable tolerances. Additionally, sample size, grind size and field duplicates were examined to ensure no bias to gold grades exists.
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	 Ramelius personnel have inspected the diamond core to verify the correlation of mineralised zones between assay results and lithology, alteration and mineralization. A number of holes effectively replicate existing holes and provide good correlation. Many UG holes cross, surface drillhole locations. Holes are digitally logged in the field and data is collected in auto validating spreadsheets. These sheets were loaded into an Access database using scripting and further validation steps. The responsible geologist makes the DBA aware of any errors and/or omissions to the database and the corrections (if required) are corrected in the database immediately. No adjustments or calibrations are made to any of the assay data recorded in the database.
Location of data points	 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. 	 All drill hole collars are picked up using accurate DGPS survey control or picked up by the UG mine surveyor. All down hole surveys are collected using downhole gyro surveying techniques provided by the drilling contractors. All holes were picked up in Edna May local grid coordinates. An accurate topographic surface has been established from mine surveys
Data spacing and distribution	 Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological 	 UG diamond holes have a variable spacing as drilled on fan patterns. Target spacing on the lodes is 30m x 20m. Drill spacing is sufficient to establish appropriate continuity and classifications.

	 and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	 No physical compositing has been applied within mineralised intervals.
Orientation of data in relation to geological structure	 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. 	 The drilling is orientated orthogonal to the interpreted strike and dip of the mineralisation. No orientation bias is evident
Sample security	The measures taken to ensure sample security.	 All bagged samples are delivered via a certified freight company to the assay laboratory in Perth, whereupon the laboratory checks the physically received samples against sample submission/dispatch notes.
Audits or reviews	 The results of any audits or reviews of sampling techniques and data. 	No external audits have been completed to date.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	 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. 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. 	 The results reported in this report are all located on M77/88 owned by Edna May Operations Pty Ltd. Currently all the tenements are in good standing. There are no known impediments to obtaining a licences to operate in either area.
Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 Exploration and dilling by other parties has been reviewed and used. Previous parties have completed surface and underground diamond and RC drilling. Companies include Westonia Mines, ACM, Catalpa and Evolution.
Geology	 Deposit type, geological setting and style of mineralisation. 	 Hosted by the Edna May Gneiss, a metamorphosed granitoid with strike length of 1km, width of 140m and depth extent of 700m and bounded by a mafic-ultramafic stratigraphy. Mineralisation relates to widespread quartz veining, which occurs as thin sheeted foliation parallel or larger cross-cutting reef veins with a polymetallic sulphide assemblage. Mineralisation forms a broad low-grade stockwork throughout the gneiss.
Drill hole Information	 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: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and 	 Example drill holes completed, including holes with no significant results (as defined in the Attachments) are reported in previous announcements by Ramelius Resources. Easting and northing are given in local mine coordinates RL is AHD Dip is the inclination of the hole from the horizontal. Azimuth is reported in local grid. Down hole length is the distance measured along the drill hole trace. Intersection measured along the drill hole trace.

	this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	 Hole length is the distance from the start to the end of the hole measured along the drill hole trace. No results are generally excluded from reports.
Data aggregation methods	 In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	 No exploration results are reported. Intercepts used in resource modelling are typically defined by cutoff and/or geological interpretation. Lower cutoff varies from 0.5 to 2 g/t based on deposit style and whether open pit or underground mining scenario. Topcuts not generally applied to drill intercept reporting. Weighted average techniques are applied to determine the grade of the anomalous interval when geological intervals less than 1m have been sampled. No metal equivalent reporting is used or applied.
Relationship between mineralisation widths and intercept lengths	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole 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 (eg 'down hole length, true width not known'). 	 This report relates to resources and reserves based on existing drillhole datasets. No new exploration results are reported. True width or relationship generally reported where known.
Diagrams	 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. 	 Example maps and sections are included.
Balanced reporting	 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. 	 Drill holes completed to date are generally reported in previous releases and all material intersections are reported.
Other substantive exploration data	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.	 No other exploration data that has been collected is considered meaningful and material to this report.
Further work	 The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	 Further work mainly comprises of further drilling programmes. No details or diagrams are attached for this announcement.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	 Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. 	 Data was imported from digital logging sheets and validated via a number of steps when entered into the Access database. Validation includes scripting checks and final visual validation by the Resource geologist. Data was exported from the Access database as Micromine data files for use in the estimate
Site visits	 Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	 The Competent Person is a full-time employee of Ramelius Resources and has made multiple site visits Visits verified understanding of deposit and available information
Geological interpretation	 Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	 Confidence in the geological interpretation is high. Data used includes drilling assays & logging and density data from a number of generations of drilling and mining. No alternate interpretation required Geology forms a base component in the mineralisation interpretation.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• Edna May gneiss unit is a lenticular body, typically 50-150m thick, 1000m long and defined down-dip to 700m. It strikes east-west and dips N at 50-60°. Quartz reefs strike N-NE and dip 45-50 W.
Estimation and modelling techniques	 The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. 	 The Edna May Gneiss unit forms the main mineralised domain and grades were generated within it using anisotropic Ordinary Kriging. Population statistics were reviewed and appropriate topcuts and parameters applied. Quartz reefs were constrained within interpreted lode shapes and estimated separately. The resource model was constructed using Micromine software. Grade within the domain is estimated by geological software using Kriging and Inverse Distance within hard bounded domains. Gold grade is estimated No non gold elements of significance Parent cell of 10mE x 5mN x 5mRL with sub-cells to minimum of 1mE x 2mN x 1mRL. Parent cell estimation only. Parent cells are pit SMU size or larger. Domains are statistically analysed and assigned appropriate search directions, top-cuts and estimation parameters. The search is aligned with the observed geological strike and dip of the lodes. Lode domains estimated separately. Samples were applied to domains after review of grade population characteristics. Topcuts used ranged from 10 to 13 g/t for the EMG domains and 25 & 50 g/t for the high-grade sub-domains. Validation includes visual comparison against drillhole grades and comparison against previous models.

	 Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to 	
	drill hole data, and use of reconciliation data if available.	
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	 Cutoffs reflect the grade continuity of mineralised zones. Reporting cutoff is 0.5g/t reflecting economic considerations
Mining factors or assumptions	 Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made. 	 Resources are reported on the assumption of mining by conventional open pit mining methods or selective underground mining of lodes or bulk underground mining methods The parent block is a suitable SMU for bulked mining scenarios.
Metallurgical factors or assumptions	 The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. 	Recovery is well established at 92-94%
Environmental factors or assumptions	 Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. 	 Operating mine No issues
Bulk density	 Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately 	Density is well established

	 account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	
Classification	 The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit. 	 The resource has been classified as Indicated or Inferred category's based on geological and grade continuity and drillhole spacing and generation and likely economic extraction The resource classification accounts for all relevant factors The classification reflects the Competent Person's view
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	 No audits or reviews conducted. Previous resource comparison models exist
Discussion of relative accuracy/ confidence	 Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	 The accuracy and confidence in the Resource is reasonably high given the deposit style, quality and density of drilling and sampling. Resources are global estimates Significant production data is available