ASX/Media Announcement

KSN

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RESOURCES

# Misima Resource increases to 3.21Moz of gold, 18.2Moz of silver

Higher-confidence Indicated Resource of <u>49.9Mt @ 0.95g/t for 1.52Moz</u> to underpin Pre-Feasibility Study

JORC 2012 Mineral Resource update for the Misima Gold Project delivers a 15% increase in contained gold ounces and 30% increase in contained silver ounces to:

<u>105Mt @ 0.93g/t for 3.21Moz (Indicated and Inferred).</u>

17% increase in total Indicated ounces, available for conversion to Ore Reserves, to:

• <u>49.9Mt @ 0.95g/t for 1.52Moz</u>.

Pre-Feasibility Study, including Ore Reserve estimate, to commence immediately with targeted completion by year-end.

Ewatinona confirmed as starter pit delivering initial feed for the Pre-Feasibility Study.

Substantial potential to further expand the Mineral Resource and upgrade additional Inferred ounces.

Resource drilling to re-commence at Ewatinona once travel suspensions are lifted.

Kingston Resources Ltd (ASX: KSN) is pleased to report a significant increase in the JORC 2012 Mineral Resource Estimate for its flagship **Misima Gold Project, PNG**, incorporating the results of recent successful drilling programs and updated gold price assumptions.

The updated Misima Resource has delivered a **15% increase in total gold ounces and 30% increase in total silver ounces** and now comprises an Indicated and Inferred Mineral Resource of **105.5Mt** @ **0.93g/t** Au and **5.4 g/t Ag for 3.2Moz Au and 18.2Moz Ag**, (see Table 1), confirming the Project's status as one of the most significant mid-tier gold development opportunities in the Asia-Pacific region.

Kingston commenced drilling at Misima in June 2018 with 49% equity ownership in the project, the Company has since increased its equity ownership to 80.5% and has a non-binding agreement to move to 100% ownership. Early work highlighted that a starter pit would considerably enhance project economics. With this in mind, the exploration strategy has focused on near-surface opportunities, and the Company can now confirm Ewatinona as the intended starter pit for Misima.

The Misima Resource update has focused on updating the geological model at Ewatinona while also revising project assumptions around cut-off grade and gold price inputs. The updated Resource will now underpin the Pre-Feasibility Study (PFS), which is expected to be complete by the end of 2020. The PFS will be enhanced by the 17% increase in Indicated ounces to 1.52Moz, of which 97% sits within a US\$1,400 pit shell. The



ASX: KSN Shares on Issue: 177M Market Cap: A\$28M Cash: A\$2.0M (31 Mar 2020)



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21 May 2020



Umuna Deposit currently contains 94% of the total Resource ounces and is expected to underpin the Pre-Feasibility work focusing on a large-scale, long-life open pit mining project.

**Kingston Resources Managing Director, Andrew Corbett, said:** "This is a great result for Kingston shareholders, with the substantial increase in gold and silver ounces firmly establishing Misima as one of the most exciting new mid-tier gold development opportunities in the Asia-Pacific. The significant increase in overall ounces, and in particular the 17% increase in Indicated ounces to 1.52Moz, provides a fantastic platform from which to launch our mining studies. Our improved understanding of Ewatinona is also a key step forward for the project and clearly establishes our proposed starter-pit.

"A special thanks goes out to the Kingston geological team, headed up by our Chief Geologist Stuart Hayward, for advancing the Project to this point. Under Stuart, the team has significantly advanced its understanding of Umuna and Ewatinona, and we are all looking forward to making the transition to mining studies to demonstrate the strength of the Misima Gold Project.

"Looking ahead, there are considerable operational and economic benefits to be unlocked by focusing on Ewatinona and Umuna. Both areas leverage off previous mining access which remains in place, they have both been mined historically, and had a combined total of over 90 million tonnes of ore processed through a standard CIL plant. Kingston therefore has considerable historical information on the mining, milling and geotechnical characteristics of these orebodies, as well as the historical processing plant design. Alongside giving us confidence in the Project's future, this information will save time and costs in delivering the upcoming PFS.

"On the ground, as soon as we can re-commence exploration activity, drilling will focus on completing the infill program at Ewatinona cut short by domestic and international travel restrictions. Following that, the Resource work completed by the team has highlighted a number of priority areas where drilling could upgrade further near-surface Inferred ounces. We look forward to recommencing drilling in the near term and continuing to work with the people of Misima and PNG on the world-class Misima Gold Project."

Deposit	Classification	Cutoff	Tonnes	Gold	Silver	Au Moz	Ag Moz
		g/t Au	Mt	g/t Au	g/t Ag		
	Indicated	0.4	48.2	0.95	4.7	1.47	7.3
Umuna Witin USD\$1700 Pit Shell	Inferred	0.4	46.3	0.90	6.5	1.34	9.7
	Combined		94.5	0.93	5.6	2.81	17.0
Umuna Extension outside USD\$1700 Pit	Inferred	0.8	3.4	1.40	4.1	0.20	0.5
Umuna Total	Indicated		48.2	0.95	4.7	1.47	7.3
Unital Total	Inferred		46.3	0.90	6.5	1.34	10.2
Umu	Umuna TOTAL		97.9	0.94	5.6	3.01	17.5
Ewatinona Total Within	Indicated	0.4	1.7	0.90	2.8	0.05	0.2
USD\$1700 Pit Shell	Inferred	0.4	5.8	0.80	3.1	0.15	0.6
Ewatin	Ewatinona TOTAL		7.5	0.83	3.0	0.20	0.7
	Indicated		49.9	0.95	4.6	1.52	7.5
MISIMA	Inferred		55.6	0.92	6.0	1.64	10.3
MISI	MISIMA TOTAL				5.4	3.21	18.2

#### Table 1. Misima Resource Summary

Notes: JORC 2012 definitions are used for the Mineral Resources.

Rounding may cause apparent computational errors

Reported at USD1,700/oz gold price

Cut-off grades are based on reasonable expectation of extraction and historical production performance Pit shells derived based on historical mining parameters from Placer operations



### Exploration to drive further Resource upgrades

Kingston's primary focus for ongoing drilling in 2020 will be on upgrading and potentially extending both the Umuna and Ewatinona Resource with a focus on near-surface opportunities.

Key growth opportunities at Umuna include: (see Figures 1, 4 & 5):

- Follow-up drilling and Resource model update at Umuna and Umuna East, building on all drilling completed to date;
- Extensional and in-fill drilling of the southern extensions of Umuna at Kulumalia; and
- Additional Umuna extensions including Tonowak and Padocol.

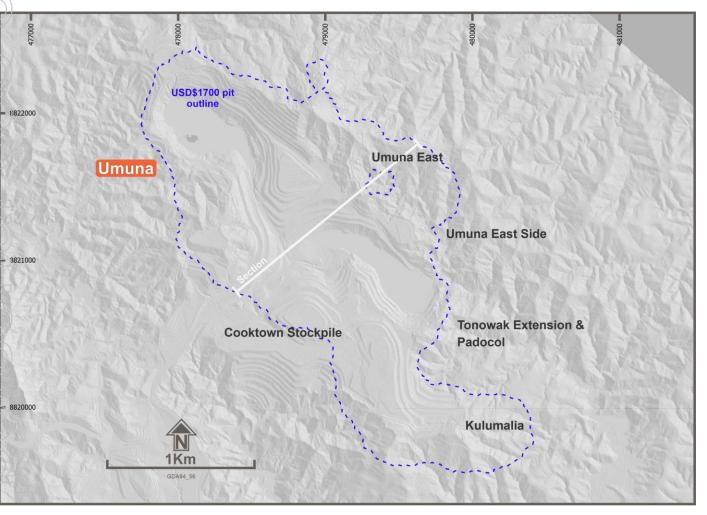


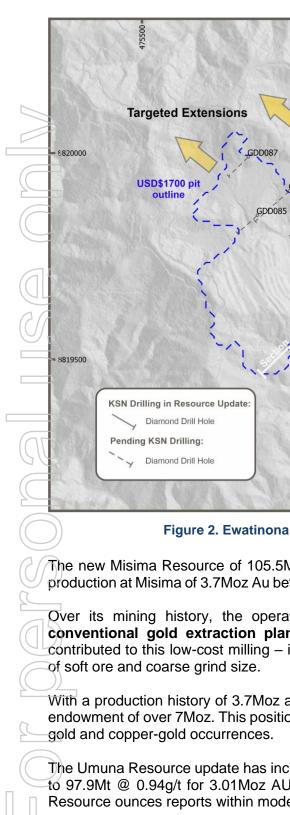
Figure 1. Umuna Resource outline highlighting near surface priority exploration targets

The Cooktown Stockpile exploration target material (3.6Mt @ 0.5g/t to 0.7g/t Au for 58,000 to 81,000oz) reported on 21st March 2019, is not included in any tonnes and grade calculations in the 2020 mineral resource estimation for Umuna.

Growth opportunities at Ewatinona include: (see Figures 2 and 6)

- Resource drilling to both upgrade and extend the Ewatinona Resource;
- Follow up extensional targets outside the current Resource identified from recent field work;
- Follow up drilling on the Abi discovery 600m SE of Ewatinona; and
- Resource model update to include additional nine holes for which assays were received post Resource cut-off date.





176000 Ewatinona GDD091 GDD088 GDD077 GDD076 GDD090 GDD072 GDD074 GDD083 GDD082 GDD089 GDD078 GDD029 GDD081 GDD080 GDD086 GDD070 GDD035 GDD073 GDD075 GDD040 GDD031 GDD032 GDD068 GDD039 GDD030 GDD033 GDD038 GDD034 GDD037 GDD036 Targeted Extensions 500m Abi

Figure 2. Ewatinona plan view showing Resource outline and KSN drilling

The new Misima Resource of 105.5Mt @ 0.93g/t Au for 3.21Moz Au builds on successful historical Placer production at Misima of 3.7Moz Au before mining ceased in 2001 in a sub-US\$300/oz gold price environment.

Over its mining history, the operation was recognised as having one of the **world's lowest cost conventional gold extraction plants**<sup>1</sup>. Kingston expects to benefit from many of the factors which contributed to this low-cost milling – in particular, the deposit's very favourable metallurgical characteristics of soft ore and coarse grind size.

With a production history of 3.7Moz and a current Resource of 3.2Moz, Misima now has a total known gold endowment of over 7Moz. This positions Misima as a world-class gold deposit in a region known to host giant gold and copper-gold occurrences.

The Umuna Resource update has increased the Umuna Resource tonnes by 29% and overall ounces by 7% to 97.9Mt @ 0.94g/t for 3.01Moz AU and 18.2Moz of Ag. A significant proportion of the current Indicated Resource ounces reports within moderately priced pit shells, as shown in Table 2 below.

Having a high component of Indicated ounces inside relatively conservatively priced pit shells is encouraging as the Company makes the transition to mining studies and targets the completion of an Ore Reserve by the end of this year.

<sup>&</sup>lt;sup>1</sup> Kennedy, 1994, AUSIMM, "Misima Mines milling operation: one of the World's lowest cost conventional gold extraction plants."



	At 0.4 g/t cut off	Total In-pit Ounces (Moz)	Indicated Ounces (Moz)	Inferred Ounces (Moz)
	Umuna US\$1400/oz	2.49	1.43	1.09
	Umuna US\$1500/oz	2.62	1.44	1.20
2	Umuna US\$1600/oz	2.75	1.46	1.29
	Umuna US\$1700/oz	2.81	1.47	1.34
	Umuna US\$1800/oz	2.87	1.48	1.40

Table 2: Umuna Resource within pit-shells shows high component of Indicated Ounces inside US\$1400/oz shell

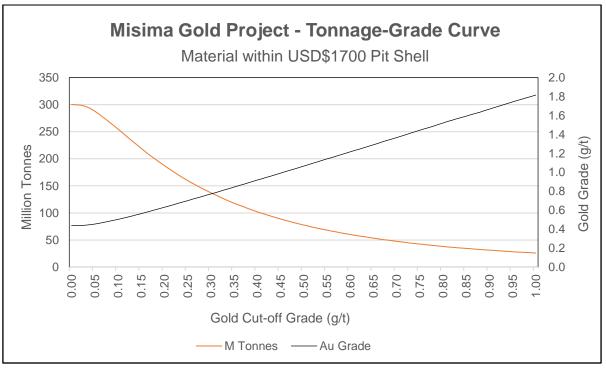


Figure 3. Tonnage-Grade curve for Total Misima Gold Resource

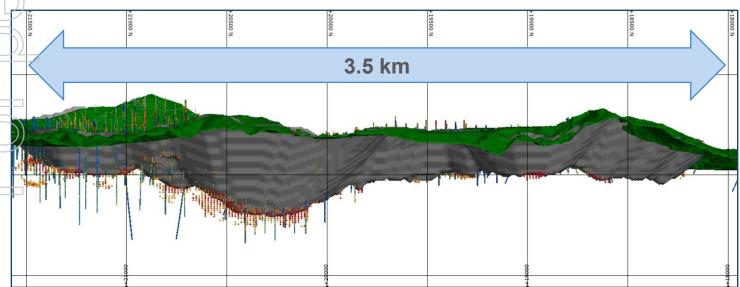


Figure 4. Umuna long section showing limited drilling outside current Resource shell (US\$1700/oz pit shell in grey)



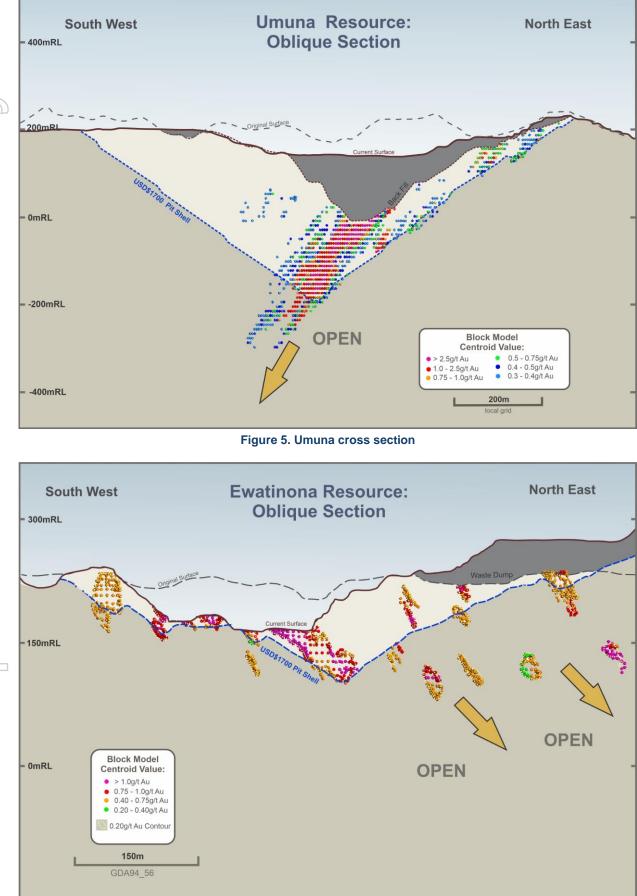


Figure 6. Ewatinona cross section

Deposit	Oxide	Classification	Cutoff	Tonnes	Gold	Silver	Au Moz	Ag Moz
			g/t Au	Mt	g/t Au	g/t Ag		
	Oxide	Indicated	0.4	4.6	0.74	11.0	0.11	1.6
	Uxide	Inferred	0.4	8.5	0.81	11.9	0.22	3.2
Umuna	Primary	Indicated	0.4	43.6	0.97	4.1	1.36	5.7
within USD\$1700	Prindry	Inferred	0.4	37.8	0.92	5.3	1.12	6.5
Pit Shell	Sub-total	Indicat	ed	48.2	0.95	4.7	1.47	7.3
	Sub-lola	Inferre	ed	46.3	0.90	6.5	1.34	9.7
	Total	Combir	ned	94.5	0.93	5.6	2.81	17.0
Umuna Extension outside USD\$1700 Pit Shell	Primary	Inferred	0.8	3.4	1.40	4.1	0.20	0.5
Umuna Total Resource		Indicated			0.95	4.7	1.47	7.3
omuna rotar Resource		Inferred			0.90	6.5	1.34	10.2
Umu	ina TOTAL			97.9	0.94	5.6	3.01	17.5
	Oxide	Inferred	0.4	1.9	0.71	4.0	0.05	0.2
Ewatinona	Drimon	Indicated	0.4	1.6	0.92	2.7	0.05	0.1
within USD\$1700	Primary	Inferred	0.4	3.9	0.85	2.7	0.11	0.3
Pit Shell	Sub-total	Indicat	ed	1.7	0.90	2.8	0.05	0.2
	Sub-lolui	Inferre	Inferred		0.80	3.1	0.15	0.6
Ewatinona TOTAL			7.5	0.83	3.0	0.20	0.7	
MISIMA		Indicated		49.9	0.95	4.6	1.52	7.5
		Inferred		55.6	0.92	6	1.64	10.3
MISI	MA TOTAL			105.5	0.93	5.4	3.21	18.2
Table 3. Misima Gold Project detailed Resource								

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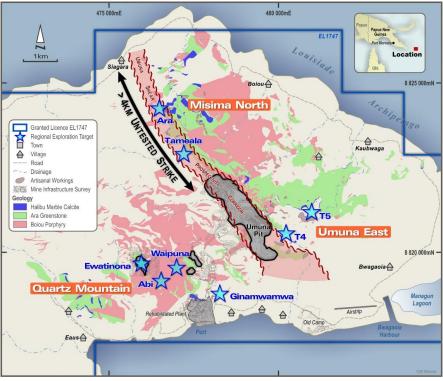


Figure 7. Misima Gold Project – Regional target map.

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#### Technical Note Misima Gold Project Milne Bay Province, Papua New Guinea

Compiled by Competent Person: Stuart Hayward BAppSci (Geology), MAIG

# Introduction

This technical note on the Misima Gold Project (the Property), has been prepared by Stuart Hayward for Kingston Resources Limited (KSN or the Company). The Misima Gold Project is located within EL1747 that encompasses the eastern half of Misima Island, Milne Bay Province, Papua New Guinea (PNG). Misima is located approximately 625km east of Port Moresby, the capital of PNG.

This technical note has been prepared to form part of the technical documentation for an ASX public release and is accompanied by a JORC 2012 Table 1 in accordance with the JORC Code 2012. The technical note summarises the Misima Gold Project mineral resource in terms of the JORC 2012 guidelines and in respect to reporting that part of the resource that has "reasonable prospects for eventual economic extraction".

Further specific details are noted in the attached Umuna deposit JORC 2012 Table 1 and Ewatinona deposit JORC 2012 Table 1, and by referencing previous Kingston public reports.

# **Project Geology and Mineralisation**

The Misima Gold Project comprises two main deposits, Umuna and Ewatinona, and multiple reconnaissance exploration targets along and adjacent to the 10km strike length of the Umuna Fault Corridor that hosts the historical Umuna deposit, and Quartz Mountain area that hosts the Ewatinona deposit (Figure 7).

Misima Island forms part of the Louisiade Archipelago which is a continuation of the Papuan Fold Belt of the Papuan Peninsula offshore eastwards through the Papuan Plateau. The oldest rocks on Misima are Cretaceous to Paleogene metamorphic rocks, which can be subdivided into the western Awaibi Association and the younger overthrust eastern Sisa Association that is host to the gold and copper mineralisation. The two associations are separated by an original thrust fault with later extensional activation.

Mineralisation deposit style on Misima Island is best described as low sulphidation carbonate base-metal epithermal due to the vein characteristics, the dominance of Ag Zn Pb Au Cu Mn geochemistry as well as complex alteration styles and geometry, and strong association with precursor porphyry Cu-Au style alteration.

Styles of mineralisation observed across Misima Island include multiphase hydrothermal breccia, stockworks both sheeted and three-dimensional, skarn, jasperoidal replacement, and poorly banded vein infill of quartz and carbonate with associated pyrite, galena, sphalerite, barite and minor tetrahedrite. Mineralisation is strongly structurally controlled by pre-existing structures that have been reactivated and mineralised over time.

The Umuna deposit is a complex fault array with a large fault zone hosting the majority of the precious metal mineralisation, with numerous ancillary splays developed in the footwall to the main structure. Internal structures within the fault complex and the intersection of structures and splays with the dominant Umuna Fault, are loci for zones of well-developed mineralisation. A series of north west trending splays intersect and control the loci of the higher-grade material within the Umuna fault zone. Surrounding the Umuna lode, and most widely developed on the eastern (footwall) side, is a broad peripheral zone of lower grade mineralisation in quartz veins, often occupying shears, and of linear and irregularly shaped volumes of strongly jointed to brecciated rocks. The schists tend to carry shear or breccia mineralisation with a higher frequency of strong



jointing and brecciation in the more compact intrusives and Ara Greenschist. Intrusive contacts are commonly brecciated and mineralised which, with their frequent shallow dips, has the effect of spreading mineralisation laterally in contrast to the steep attitude of Umuna lode mineralisation. As noted, mineralisation is dominantly structurally controlled, however, strong secondary stratigraphic controls are also observed, in particular, where skarn style mineralisation is developed at the Halibu Limestone – Ara Schist contacts.

The Ewatinona deposit is dominated by brecciated porphyry units which are cut by faults trending in three major directions (northwest, west northwest and southwest) with steep north and north east dips. Mineralised structures can range from crackle brecciated porphyry with base metal sulphide and quartz-carbonate-base metal sulphide infill, to more well-defined fault breccia with stockwork veining and crackle brecciation haloes. Orientation of mineralised structures in mined out areas is interpreted from 3D implicit modelling of grade distribution in grade control data and supported by pit mapping. Combining all data sets with orientated drill core data for mineralised veins and breccias defines the predominant structural trends in the deposit and the foundation for the resource model. The current interpretation is that Ewatinona mineralisation is open along strike and at depth.

# Drilling

Diamond and RC drilling was completed on Misima from 1978 until Placer ceased mining operations in 2000. WCB Resources completed five diamond drill holes in 2017 focussed on porphyry copper targets adjacent to the Umuna pit. Kingston has completed 85 diamond drill holes across EL1747 since 2018. Twenty-seven new drill holes completed in 2019 and 2020 are included in the Ewatinona geology model and mineral resource update. The Umuna geology and resource model is not informed by new data and remains unchanged from 2017.

All historic diamond drill holes are PQ3, HQ3, or NQ3 in core size. Historic RC drilling comprise 4"to 5" diameter hammers. Kingston drill holes are all PQ3 and HQ3 with every core run orientated using electronic downhole tools.

Dill hole data is managed in an acQuire relational database with check and validation procedures assessing the stored data as being of a quality suitable for mineral resource estimation.

# Sample Preparation and Analysis

From 1989-2000 sample preparation was completed on site with whole core prepared and assayed due to problems associated with splitting the drill core. RC samples were riffle split. Gold was determined using a screen fire assay and silver, copper, lead and zinc using an AAS at the Placer on site lab. Where gold was > 0.5 Au ppm, a check assay was carried out at Classic Labs in Townsville using screen fire assay.

Kingston diamond drill core is sampled in 2m intervals away from the ore zone or to lithological contacts, whichever is shorter. In mineralised areas, core is sampled in 1 to 2m lengths or to lithological contacts. Minimum interval sampled being 0.5m. All core was cut in half lengthwise using a diamond saw parallel to the orientation line. PQ core up to hole GDD051 were assayed using quarter core to reduce sample weight. All subsequent drill holes are assayed using half core. Half core samples were sent for assay and the other half retained as reference core in the core tray on site. Samples are transported to Intertek in Lae where they are dried and crushed to 95% passing 3mm. The crushed sample is then pulverised and a 50g charge is taken for gold analysis by fire assay in Lae. A 100g pulp from each sample is flown to Townsville where it is analysed using Intertek's Four Acid 33 Element package. An optical emission spectroscopy (OES) finish is provided for Ag, Pb, Zn and Cu values that report over-range assays.



Quality assurance (QA) and quality control (QC) protocols included the monitoring and analysis of inserted certified reference material, blanks and duplicate samples to monitor assay sample data for contamination, accuracy and precision and to ensure sample representivity. Check analysis of selected samples by an alternative laboratory (ALS Perth) in Australia has been completed to monitor laboratory performance.

Overall, the precision and accuracy of the total dataset for Umuna and Ewatinona is of acceptable standard and assessed as suitable for mineral resource estimation for the gold mineralisation and deposit style.

# **Survey Control**

All Kingston diamond drill holes are surveyed using high accuracy RTK GPS equipment operated by registered surveyors. All spatial data sets are located relative to a high accuracy LiDAR topography survey completed in 2018. Historical spatial data sets have been translated from local grid systems to GDA94 Zone 56 based on translation derived from the detailed survey and cross-referenced with LiDAR topography.

# Mineral Resource Estimation

The mineral resource model for Umuna has not been modified in any way and can be referenced in the Kingston Resources ASX announcement released 27 November 2017, and in the 2017 resource report (McManus, 2017b).

The Ewatinona geology and mineralisation model has been revised and rebuilt using all available historical and new data sets. The data sets have been compiled and cross referenced with each other to build a threedimensional model of the Ewatinona mineralised structures that are used as inputs to the resource model. Orientated drill core has provided corroborating data supporting interpretation of 3D structure trends.

Grade estimation has been completed by an independent consultant resource geologist Mr. Chris De-Vitry (MAIG, AUSIMM) of Manna Hill Geoconsulting. Mr De-Vitry has reviewed this report and consents to the inclusion of his work in the form and context in which it appears. Geology, structure, and validated data inputs to the resource estimation are managed and provided by Kingston with geological and mineral system context provided through direct consultation between Mr. De-Vitry and Mr. Hayward (CP).

The gold and silver block grade were estimated using Ordinary Kriging with Isatis software. Pb, Zn and Cu estimates were determined by inverse distance squared interpolation.

Ordinary Kriging is an appropriate method to use if top cutting or outlier restriction is carried out and the data is domained.

Specific details of modelling parameters and modelling approach can be referenced in the attached JORC 2012 Table 1.

# Mineral Resources

Individual Mineral Resources were calculated for Umuna and Ewatinona, with results combined to calculate a total resource for Misima. Considerations, assumptions, and modifying factors specific to each deposit and common across the project are discussed in detail in the next section.

The Misima Mineral Resource totals 105.5Mt @ 0.93g/t Au and 5.4g/t Ag, for 3.21Moz gold and 18.2Moz silver (Table 3), comprising 47% classified as Indicated containing 1.52Moz gold, an increase of 7% in gold ounces and 29% in tonnes.



Geology models for both deposits have been evaluated using Whittle pit shells at gold price points of USD\$1400, USD\$1500, USD\$1600, USD\$1700 and USD\$1800, and USD\$20 for silver. Pit shells were generated based on input mining parameters that are unchanged from previous resource estimations and are based on historical operational design factors and performance. Cut-off grades at each deposit have been assessed by Kingston as meeting the test of having reasonable prospects of eventual economic extraction.

Umuna mineral resources are estimated as 97.9Mt @ 0.94g/t Au and 5.6g/t Ag, for 3.01Moz gold and 17.5 Moz silver (Table 3). The Umuna resource update is based on an unchanged existing geology/block model that has been re-evaluated based on revised gold and silver price assumptions as input to development of Whittle pit shells for reporting. Resource classification has not been changed or modified from previous resource estimations, and mineral resources at Umuna are reported as material classified as indicated and inferred  $\geq$  0.4g/t Au cut-off within a USD\$1700 pit shell, and material at  $\geq$ 0.8 g/t Au cut-off immediately down dip and along strike that does not extend significant distances (50-75m) from the pit shell. The increase in contained gold and silver is due to the combined effect of cut-off grade and increased volume of material reporting within the USD\$1700 pit shell.

It must be noted that the Cooktown Stockpile exploration target material (3.6Mt @ 0.5g/t to 0.7g/t Au for 58,000 to 81,000oz) reported on 21st March 2019, is not included in any tonnes and grade calculations in the 2020 mineral resource estimation for Umuna and has been considered as waste in pit optimization calculations.

Evatinona mineral resources are estimated as 7.5Mt @ 0.83g/t Au and 3.0g/t Ag, for 0.2Moz Au and 0.7Moz Ag (Table 3). The Ewatinona mineral resource has been significantly updated and improved using all available historical and recently acquired geological data to develop a well-supported three-dimensional geological, structural and mineralisation model. Mineral resources at Ewatinona are reported as material classified as Indicated and Inferred  $\geq$  0.4g/t Au cut-off within a USD\$1700 pit shell. Classification at Ewatinona has been revised to include 25% of the resource now assessed as Indicated using the approach detailed in the next section.

Both resource models are assessed as fit for purpose as inputs into mining studies planned for 2020.



# **Consideration of Input Parameters and Assumptions**

The Misima Gold Project 2020 Mineral Resource Estimate and reporting has been completed with reference to the following summary of key considerations and assumptions. Kingston consider that the reported resources for both Umuna and Ewatinona have reasonable potential for eventual economic extraction.

# **General Considerations**

Environmental, social, and geographical constraints:

The area immediately around the mine lease has been subject to historical mining and is all secondary regrowth jungle and forest.

Socially, the local people are accepting of mining, and after the closure of the Placer mine, many of the local people now work on fly-in-fly-out rosters to other mines. The local community brings a significant level of mining and trades talent and expertise to any future project as well as support for re-opening the mine.

Kingston have continued a program of regular water quality and sediment sampling at key sample locations around the project and active exploration areas. A majority of sample locations are the same as those established by Placer/Placer and show no degradation in water quality or sediment loads due to exploration activities.

Topographically, ore can be accessed early during project development with minimal stripping from some parts of both the Umuna and Ewatinona deposits.

Topography is derived from a high accuracy LiDAR survey completed in 2018 and is used as a ground truth reference point for assessing historical spatial data sets.

# Umuna

Geology and Block Model:

- No changes or modifications have been made to the underpinning geology and resource/block model from the 2017 resource update.
- All variables within the block model are retained and are unchanged.
- Gold and silver grades have not been re-estimated or modified in any way.
- Spatial data has been retained with reference to the historic local mine grid.

### Mining Method:

- Mining is assumed to be by Open Pit.
- Geotechnical, pit wall stabilities and slope assumptions and parameters are well known from previous mining.
- Selective mining unit and grade control assumptions and parameters have all been based on previous mining.
  - Material outside of the USD\$1700 pit shell and reported at a higher cut-off grade (0.8g/t Au) is included in the resource as it is assessed as having reasonable potential for eventual economic extraction through specific design and mining schedule modifications developed during the life of mine, e.g. steeper pit walls and accelerated schedule.

### Metallurgical Factors:

There is a significant history of mining of the project with supporting mill records. The recovery, tails and milling factors and assumptions are well known and utilised in development of Whittle pit shells (recoveries: 92% for gold and 50% for silver).



### Cut-Off Grade:

- Shannon and Stoker (2013 Nat-Inst 43-101 report) used cut off grades determined from an optimized Whittle pit at a \$US1,200 gold value.
- The same cut off grades were again used in 2015 (Shannon & Stoker 2015), and 2017 (McManus 2017a). A cut-off grade analysis undertaken during the two later reports showed that a lower cut-off could be achievable with Skandus considering that the 0.5g/t cut-off as being appropriate when reporting the 2017 resource in accordance with JORC (2012) (McManus, 2017b).
  - Kingston has revised the gold cut-off grade and consider a 0.4g/t Au cut-off as being reasonable and appropriate for reporting in-pit resources when considering historical mine performance and higher gold price assumptions based on forward looking gold price forecasts.
  - A cut-off grade of 0.8g/t Au is used to report material below and outside of the USD\$1700 pit shell that could be reasonably potentially economically extracted through modified mining and mine design approaches at the time. Only blocks within a reasonable distance (50-75m) from the bottom of the USD\$1700 pit-shell have been included in the resource.

# Continuity and Classification:

- Classification has not changed between the Skandus 2017b (JORC 2012) resource and the Kingston 2020 update.
  - During classification of the Skandus 2017b (JORC 2012) resource, care was taken to ensure that contiguous blocks were classified in section and that a computer generated 'above a value' classification was not the main driver to avoid the 'spotted dog' complex. (Stephenson, 2006). This also ensures that small pods of distant ore are not included in the reported resource that may not be economically extracted.

# Exploration Considerations:

- Placer undertook minimal exploration outside of the designed pit shell. Mineralised structures continuing at depth were not drilled with sufficient density beyond the pit shell to be included in a resource at the time.
- The 310° striking mineralization as seen in the Tonowak and Kulumalia structures, often formed in shoots within the structure. The mineralisation is not well defined by drilling due to drill orientation, and the main Umuna structure and contact being the focus of most drilling. Ore at the intersection of structures within the main Umuna Structure corridor may account for much of the positive reconciliation in both tonnes and grade that was experienced during the life of the mine.
- Potential exists for defining near surface oxide mineralisation along parallel structures and splays adjacent to the historic mining footprint.
- Drilling density and thus block estimation has limited the bottom of the various Whittle pit optimisations.
  - Mineralised material stockpiled by Placer on the crest of the historical pit (Cooktown Dump Stockpile) has not been included in the mineral resource estimate and does not contribute in any way to tonnes and grade and contained ounces calculations. Resource estimation of this material would allow inclusion in mine planning, potentially improving project economics.

# Ewatinona

The Ewatinona deposit has undergone a significant revision of the geology and mineralisation model based on the addition of 27 diamond drill holes for 4608.80m completed by Kingston between April 2019 and February 2020. A combination of high quality drilling data including orientated structures, surface mapping and sampling, compilation and review of historical exploration, and production data sets, has resulted in a



significantly improved understanding of the geology and controls on mineralisation, and thus confidence in 3D spatial interpretation and modelling.

Geology and Block Model:

- All available historical and new data sets were compiled and cross referenced with each other to build 3D mineralised structures that were used as inputs to the revised Ewatinona geology and mineralisation model. Orientated drill core has provided corroborating data supporting interpretation of 3D structure trends.
- Exploratory data analysis of data sets and geochemistry links gold grade and presence of mineralisation and mineralised structures in drill core.

Topography and Survey Datum:

- Spatial data sets have been developed and utilised with reference to the GDA94 Zone 56 datum. GDA94 has been assessed as being effectively the same as PNG94.
- The use of GDA94 Zone 56 (PNG94) represents a change from the Skandus 2017b (JORC 2012) model that was completed in a truncated AMG grid system. Kingston have completed a rigorous high accuracy ground survey and determined a spatial data translation for historical data sets to GDA94 datum.
- Topography is derived from a high accuracy LiDAR survey completed in 2018 and is used as a ground truth reference point for assessing historical spatial data sets.
- The Kingston 2020 (JORC 2012) resource is built and generated in GDA94 Zone 56 datum.

Mining Method:

- Mining is assumed to be by Open Pit.
- Geotechnical, pit wall stabilities and slope assumptions and parameters are well known from previous mining.
- Selective mining unit and grade control assumptions and parameters have all been based on previous mining.
- Material outside of the USD\$1700 pit shell has not been reported within the Ewatinona 2020 resource.

Metallurgical Factors:

Metallurgical factors used in assessing Ewatinona are the same as those used for Umuna. Recoveries used are 92% for gold and 50% for silver based on historical project performance.

Continuity and Classification:

- Classification has been revised in the 2020 Ewatinona model to reflect a combination of confidence in the underpinning geology model and 3D spatial models of mineralisation/structures, supported and corroborated by drilling spacing, and estimation metrics such as slope of regression for Au and Ag, Kriging variance, and distance to nearest samples informing a block estimate.
- 25% of material in the USD\$1700 pit shell immediately below the center of the historical open pit and within the volume tested by new drilling completed by Kingston, is classified as Indicated.
- The remainder of material is classified as Inferred.
- This represents a material change from the Skandus 2017b (JORC 2012) resource.

Grade Estimation and Resource Reporting:

A grade shell was deemed necessary to reducing the smearing/mixing of weakly mineralised and mineralised material during kriging of Au. Implicit models of gold from drill holes were created utilising the interpreted structural controls to guide the construction of a radial basis function (RBF) in



Leapfrog. The resultant 0.2g/t Au shell is considered to appropriately reflect the geometry and spatial distribution of mineralised structures based on the available drill hole data. The choice of a 0.2g/t Au grade boundary is well below the resource cut-off of 0.4 g/t Au which will reduce conditional bias.

### Cut-Off Grade:

- The last reported mineral resources were reported at 0.5 g/t cut-off based on assessment of previous reviews by Shannon & Stoker 2013, Shannon & Stoker 2015, and 2017 (McManus 2017b).
- Kingston has revised the gold cut-off grade and considers a 0.4g/t Au cut-off as being reasonable and appropriate for reporting in-pit resources when considering historical mine performance and higher gold price assumptions based on forward looking gold price forecasts.

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This release has been authorised by the Kingston Resources Limited Managing Director, Andrew Corbett. For all enquiries please contact Managing Director, Andrew Corbett, on +61 2 8021 7492.

#### **About Kingston Resources**

Kingston Resources is a metals exploration company which is focused on exploring and developing the worldclass Misima Gold Project in PNG. Misima hosts a JORC resource of 3.2Moz Au. Misima was operated as a profitable open pit mine by Placer Pacific between 1989 and 2001, producing over 3.7Moz before it was closed when the gold price was below US\$300/oz. The Misima Project offers outstanding potential for additional resource growth through exploration success targeting extensions and additions to the current 3.2Moz Resource base. Kingston currently owns 80% of the Misima Gold Project.

In addition, Kingston owns 75% of the high-grade Livingstone Gold Project in Western Australia where active exploration programs are also in progress.



**Kingston project locations** 

The Misima Mineral Resource estimate outlined below was released in an ASX announcement on 21 May 2020. Further information relating to the resource is included within the original announcement.

Resource Category	Cutoff (g/t Au)	Tonnes (Mt)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)	Au (Moz)	Ag (Moz)
Indicated	0.4	49.9	0.95	5.7	1.52	8.9
Inferred	0.4 & 0.8	55.6	0.92	7.7	1.64	13
Total	0.4	105.5	0.93	6.5	3.21	21.9

Misima JORC 2012 Mineral Resource Estimate summary table

#### **Competent Persons Statement and Disclaimer**

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Stuart Hayward (BSc (Geology)) MAIG, a Competent Person who is a member of the Australian Institute of Geoscientists. Mr. Hayward is an employee of the Company and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Hayward consents to the inclusion in this report of the matters based upon the information in the form and context in which it appears.

Kingston confirms that it is not aware of any new information or data that materially affects the information included in all ASX announcements referenced in this release, and that all material assumptions and technical parameters underpinning the estimates in these announcements continue to apply and have not materially changed.

# JORC CODE, 2012 EDITION – TABLE 1 UMUNA GOLD DEPOSIT, MISIMA ISLAND

(e.g. submarine

# 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</li> </ul>	<ul> <li>The project was sampled using HQ, PQ and NQ triple tube diamond drill holes (DD) (540 holes for 88,255m), Reverse Circulation (RC) (1,307 holes for 146,740m) and 144 Trenches/Channels cut with a diamond saw (for 9,212m)</li> <li>DD samples were logged, photographed and marked up in lithological and structural units and sampled in 2m lengths. Whole Core was submitted due to issues with splitting the core. RC samples were taken using a riffle splitter into 1m samples. These were further representatively split and combined into a 2m composite. If Samples were wet, a tube splitter was used instead of a riffle. Trench samples were mapped and sampled in 2m intervals.</li> <li>Sample preparation was carried out on site through jaw crusher than a hammer mill, and a split sent to a lab. No data prior to 1978 has been used in the estimate</li> <li>From 1978 to 1987 Gold was determined using a screen fire assay (after AAS) and Silver, Copper, Lead and Zinc using an AAS at Fox laboratories in Sydney.</li> <li>From 1987-2000 Gold was determined using a screen fire assay and Silver, Copper, Lead and Zinc using an AAS at the Misima Mines Pty Ltd (Placer) on site lab. Where gold was &gt; 0.5 Auppm a check assay was carried out at Classic Labs in Townsville using screen fire assay.</li> <li>From 2012-2015 WCB Resources Ltd (WCB) Drill Assays were carried out at ALS using Au-AA25 using a 30g charge and ME-ICP61 for a suite of 33 elements</li> </ul>



Criteria	JORC Code explanation	Commentary
	nodules) may warrant disclosure of detailed information.	
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</li> </ul>	<ul> <li>Diamond drilling (DD) accounts for 36% (based on metres) of the drilling used in the resource and comprises of PQ, HQ and NQ sized triple tube core. Drillhole depths range from 5 to approximately 433 m with an average depth of 151m. Some Drill core was oriented to assist in structural interpretation. RC Drilling accounts for 60% of the drilling in the resource. RC diameter ranged from 4" to 5". Drillhole depths range from 15 to 269m with an average depth of 120m.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>DD Recovery was determined at the drill site while core was still in the inner tube of the wire-line core barrel. RC recovery was assessed at the rig, and where suspect it was noted in the log sheets. Attention was paid to expected sample weights. Placer procedure document outlines the recovery procedures for DD and RC drill holes.</li> <li>Larger diameter PQ, HQ and NQ size core was used to provide more improved recovery and triple tube drilling employed to preserve core in a more coherent state for logging and also to improve recovery in very broken or clayey lithologies. RC Samplers were to keep an eye on sample weights produced at the rig and advise the geologist if the weight was more or less than expected. RC samples were riffle split to produce a representative sample on site where the sample was wet a tube splitter was used. Diamond core was not split, with the whole drill core been taken for sample.</li> <li>There does not appear to be a correlation between mineralisation and poor core recovery for the DD holes that have recovery recorded. Core recovery was extremely variable during the project. WCB holes have good recoveries with 90+% in the mineralised intercepts. No bias and grade has been noted. Recovery of RC samples, where poor, was noted in the drill logs, and intervals marked as suspect.</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature.</li> </ul>	<ul> <li>All core and chips have been suitable logged to an industry standard and is appropriate to support resource estimation.</li> <li>Diamond core has been qualitatively logged for lithology, size, colour, texture, alteration, structure, weathering, and a mixture of qualitative and quantitatively logged for mineralisation, structure orientation, geotechnical and veining. RC chips were qualitatively logged for colour, weathering, lithology, alteration and mineralisation quantitatively logged. Magnetic susceptibility was logged for all drill holes. All core was photographed wet. Digital and Analogue photography is available for DD core.</li> </ul>



Criteria	JORC Code explanation	Cor
	Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	•
Sub-sampling	• If core, whether cut or	•
techniques	sawn and whether quarter, half or all core	
and sample preparation	taken.	•
preparation	If non-core, whether     riffled, tube compled	
	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	
	<ul><li>technique.</li><li>Quality control</li></ul>	
	procedures adopted for	
	all sub-sampling 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.	
Quality of	The nature, quality and	•
assay data	appropriateness of the assaying and laboratory	
and	procedures used and	•
laboratory	whether the technique	
tests	is considered partial or	
	<ul><li>total.</li><li>For geophysical tools,</li></ul>	•
		•

٠	All intervals for RC and DD have been logged. For a total
	of 244,207m

nmentary

- Core was not sub-sampled as the whole core was taken as a sample. Quartered samples were taken as required for petrography.
- Chip samples were riffle split (tube split if the sample was wet) and sampled dry, which was noted in log sheets. All 2m composites were assayed. Anomalous or suspect intervals were re-assayed from coarse rejects.
- Sample preparation for all samples followed Placer or WCB standard methodologies which are appropriate.
- QAQC procedures included checking the homogeneity of the sample at the hammer mill split via duplicates, assay reliability via inter lab checks of lab pulp and coarse rejects, free AU potential via screen fire assay, as well as the use of matrix specific standards, blanks and field duplicates. All samples that had reported gold had their coarse rejects kept in labelled core trays in the core yard for later checks and duplication as required. (This material is no longer available due to the fast decomposition of the material)
- Field Duplicates were taken to ensure representative sampling.
- Diameter of core sizes employed are considered appropriate to the grain size of the gold and in line with general industry practice for epithermal style gold deposits. Field duplicates were routinely checked to ensure that they reported within acceptable limits. Screen fire assays were routinely taken to check for the presence of free gold and the gold sizing.

All assay techniques used during the three stages of drilling used in the estimate are appropriate. The technique is total.

- No geophysical tools were used to determine any element concentrations used in this resource estimate. Grind size checks were performed by the labs and reported as part of their due diligence.
- One reference sample was inserted into laboratory For geophysical tools, spectrometers, dispatches every 50 samples submitted. The various handheld XRF standards used were: < 5 ppb Au, > 0.1 ppm Au and > 2.5 instruments, etc., the ppm Au. The geologist who logged the hole was required parameters used in to select the standard that he thought best reflected the determining the assay result expected for that batch of 50 samples. Sixty analysis including gram samples of standards were weighed from the original



#### Criteria

#### JORC Code explanation

Commentary

instrument make and model, reading times, calibrations factors applied and their derivation, etc.

 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. shipment of certified reference material. Blanks, consisting of unmineralised limestone, were used from at least 1999. Duplicates of all samples and the reject from the jawcrusher and hammer-mill stages of subsampling were retained at the geology storage shed for reassay if required. Two pulps were made from the hammer-milled samples that had sample numbers ending in zero; i.e., every tenth sample. The letters "A" and "B" were added to these sample numbers and both were presented to the mine laboratory for assay. The rejected hammer-milled pulp from the "A" sample was then split: one of these splits was sent to ALS, Townsville, Australia and the other to Classic Laboratories also in Townsville, Australia as check samples.

Files have been provided to Australian Mining Consultants (AMC) during the 2013 and 2015 resource estimate and to Skandus which provide evidence that the documented sampling protocols were carried out across the Property. They also include some of the QA/QC checks and results between the years 1978 and 2004 at Misima and nearby deposits, including Ewatinona.

- The files are not sufficient to demonstrate the continuous implementation of the QA/QC system or results throughout the drilling history. However, the files do indicate that sampling and assaying protocols and a level of QA/QC checks were in place certainly for some of the drilling programs during these years.
- AMC reviewed the available QAQC data in terms of validity of procedures and the spatial impact of results on the 2015 Mineral Resource.
- In summary:
- An industry standard QA/QC system was in place during early years of drilling, from 1978 to 1987
- There was an awareness and some focus of sampling limitations and protocols in 1990 and steps were taken to improve sample preparation
- A more comprehensive QA/QC system was in place from 1999 to 2004
- Drillholes from 2000–2004 appear to have had undergone regular QA/QC checks, and are therefore likely to have a higher level of confidence. Although it would be desirable to have demonstrated higher precision in the samples, the QA/QC data indicates that the assays were unbiased.
- There is sufficient information on sampling and assaying protocols, supported by sufficient QA/QC and mine production data to conclude that the sample database is adequate to support Measured or Indicated Mineral Resource estimates.
- Skandus reviewed MML mine memos relating to QAQC and concluded that there was an ongoing active program where issues were identified and efforts were taken to improve process, this also included a site visit by Pitard (1990) which coincides



Criteria	JORC Code explanation	Commentary
		with the site efforts to improve sampling limitations and protocols.
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>Significant intersections were inspected in the field by staff geologists to confirm nature of mineralisation and verify integrity of sampled intervals.</li> <li>Twinning had not been regularly carried out, during 2013 and 2015 AMC carried out a review of drill holes close by using boundary tools in Datamine and found acceptable correlation.</li> <li>All Data, data entry procedures, data verification and data storage has been carried out in accordance with Placer and WCB SOPS. Historical records are currently stored at a facility in Townsville whilst WCB Records have been transferred to KSN. Digital records are stored in various electronic formats. Whilst there are database formats of the drill data it is recommended that an appropriate drillhole database is used to house the Placer (which was extracted from the GEOLOG system on behalf of WCB) and WCB data.</li> </ul>
		<ul> <li>Skandus carried out its own validation checks on the drill hole files and original GEOLOG files provided after transfer and found there to be very few validation issues. Skandus also reviewed all Placer data and data protection SOPS, and selected documentation and found all work had been carried out to acceptable industry standard and care. Skandus has experience with the GEOLOG system and also reviewed original GEOLOG format files, and scans of Analogue GEOLOG log forms. Despite the data not being in a suitable database the data quality is good.</li> <li>No adjustments or calibrations were made to any assay data used in this estimate.</li> </ul>
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>Data locations were not modified or changed in any way in 2020.</li> <li>Drillhole collar surveys were conducted as soon as possible after drilling. Downhole surveys, to maintain a record of hole deviation, were conducted on angled cored holes after each 50 m was drilled. Packets containing downhole survey discs were present in several scanned images, indicating that an Eastman single shot camera was the survey tool in use at the time. During recent resource estimation work, it was established that all survey azimuths used in the GEOLOGs were magnetic, allowing easy adjustment of the down-the-hole survey data for the grid being used. In the recent diamond drilling completed by WCB, down hole surveying was conducted on intervals approximating every 30 metres.</li> <li>GDA94 datum (Zone 56).</li> <li>All data is provided in either GDA94, AGD66, Truncated AGD or Placer local mine grid. The estimate has been carried out in the local Placer mine grid. There is good documentation outlining the conversion methodology. LOCAL MMPL X = -5,146,863 + (0.8420881 * AMGX) + (0.5400387 * AMGY ) LOCAL MMPL Y = -7,149,444 + ( -0.540031 * AMGX ) + (0.8420999 * AMGY )</li> </ul>



Criteria	JORC Code explanation	Commentary
		• Topographic control was checked during 2015 by a new topographic survey conducted by WCB. AMC during the 2015 report reviewed the control with drillhole collars and end of mine surveys and found it was sufficient to support measured or indicated mineral resource estimates.
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>Drillhole spacing is approximately 25m by 25m with downhole sampling predominantly at 2m intervals adjacent to the main Umuna zone, at depth and distal zones have a 50m x 50m drill hole spacing. The majority of the RC and diamond holes were angled holes at a variety of dips and orientation, predominantly normal to the structure of interest. Some historical drilling was vertical until orientation of target structures were well known.</li> <li>For the size of the deposit and expected mining block (and historical mining block), the spacing gives good coverage of the mineralised zone and at a suitable spacing to estimate blocks. Sample spacing has been taken into consideration for classification of the resource blocks.</li> <li>Samples were composited to 2m.</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>Based on the current geological model of steep structurally controlled and gently dipping strata bound mineralisation, the orientation is appropriate for each of the differently oriented zones and styles.</li> <li>No orientation based sampling bias has been identified in the data at this point.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Placer and WCB had industry standard SOPS and protocols for governing sample security. Skandus interviewed previous senior technicians and Geologists from WCB and Placer as well as reviewed the SOP documents and found that sample security on historical samples was adequate, this is backed up by the physical remnants of material such as sample tags, lock ties, bags and drums used during the WCB campaign still in storage at the WCB site office.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Skandus, has reviewed sampling memos and a report by Pitard that audited and reviewed the Placer sampling in 1990. Pitard identified some issues and made recommendations to improve sampling. Documentation shows that these recommendations where put into practise by Placer. WCB sampling and data was reviewed by AMC during a 2013 technical report. AMC found that</li> </ul>

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Criteria	JORC Code explanation	Commentary
		the core handling, logging and sampling was carried out to industry standards.
		<ul> <li>No new audits or reviews of data have been completed by Kingston for the 2020 resource update</li> </ul>

# JORC CODE 2012 EDITION, TABLE 1 EWATINONA GOLD DEPOSIT, MISIMA ISLAND

# 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</li> </ul>	Ltd (Placer) between 1998-2000 using HQ, PQ and NQ triple tube diamond drill holes (DD) (100 holes for 13,840m) and Reverse Circulation (RC) (246 holes for 23,452m)



Criteria	JORC Code explanation	Commentary
	(e.g. submarine nodules) may warrant disclosure of detailed information.	
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</li> </ul>	<ul> <li>of the drilling used in the geology modelling and mineral resource and comprises of PQ, HQ and NQ sized triple tub core. Drillhole depths range from 46 to approximately 38 m with an average depth of 113m. RC drilling accounts for 56% of the drilling used for geology modelling and th resource. RC diameter ranged from 4" to 5". RC drill hol depths range from 50 to 171m with an average depth of 94m.</li> <li>Kingston: PQ and HQ triple-tube diamond drilling. Of th additional 4,609 metres 34% is PQ and 66% HQ core size</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Placer (1989-2000)</li> <li>DD recovery was determined at the drill site while core was still in the inner tube of the wire-line core barrel. RG recovery was assessed at the rig, and where suspect was noted in the log sheets. Attention was paid to expected sample weights.</li> <li>Larger diameter PQ, HQ and NQ size core was used to provide more improved recovery and triple tube drilling employed to preserve core in a more coherent state for logging and to improve recovery in very broken or clayey lithologies. RC samplers were to keep an eye of sample weights produced at the rig and advise the geologist if the weight was more or less than expected RC samples were riffle split to produce a representativ sample on site where the sample was wet a tube splitte was used. Diamond core was not split, with the whole drill core been taken for sample.</li> <li>Review of historical data sets by WCB found that there does not appear to be a correlation betwee mineralisation and poor core recovery for the DD hole that have recovery recorded. Core recovery wa extremely variable during the project. No bias and grade have been noted. Recovery of RC samples, where poor was noted in the drill logs, and intervals marked a suspect.</li> <li>Kingston (2019-2020)</li> <li>Core recovery is measured as the difference between core recovered in a drill run and the down-hole run shown on the driller's core blocks.</li> <li>The driller modifies drilling pressure to optimise correcovery as much as possible, particularly in areas or softer lithologies.</li> <li>There is no observed relationship or bias between sample recovery and grade.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and</li> </ul>	

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	Criteria	JORC Code explanation	Commentary
		<ul> <li>geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and 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>	size, colour, texture, alteration, structure, weathering, and a mixture of qualitative and quantitatively logged for mineralisation, structure orientation, geotechnical and veining. RC chips were qualitatively logged for colour, weathering, lithology, alteration and mineralisation quantitatively logged. Magnetic susceptibility was logged for all drill holes. All core was photographed wet. Digital photography is available for DD core.
(נו (נו (נו (נו	Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</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> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <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 material being sampled.</li> </ul>	<ul> <li>taken as a sample. Quartered samples were taken as required for petrography.</li> <li>Chip samples were riffle split (tube split if the sample was wet) and sampled dry, which was noted in log sheets. All 2 m composites were assayed. Anomalous or suspect intervals were re-assayed from coarse rejects.</li> </ul>
	Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures	



# Criteria

#### Commentary

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used and whether the technique is considered partial or total.

JORC Code explanation

- For geophysical tools, spectrometers, XRF handheld 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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. bias) lack of and precision have been established.

#### Placer:

- QA/QC procedures included checking the homogeneity of the sample at the hammer mill split via duplicates, assay reliability via inter lab checks of lab pulp and coarse rejects, free Gold potential via screen fire assay, as well as the use of matrix specific standards, blanks and field duplicates. All samples that had reported gold had their coarse rejects kept in labelled core trays in the core yard for later checks and duplication as required. This material is no longer available due to the fast decomposition of the material.
- Field Duplicates were taken to ensure representative sampling.
  - One reference sample was inserted into laboratory dispatches every 50 samples submitted. The various standards used were: < 5 ppb Au, > 0.1 ppm Au and > 2.5 ppm Au. The geologist who logged the hole was required to select the standard that he thought best reflected the assay result expected for that batch of 50 samples. Sixty-gram samples of standards were weighed from the original shipment of certified reference material. Blanks, consisting of unmineralised limestone, were used from at least 1999. Duplicates of all samples and the reject from the jaw-crusher and hammer-mill stages of subsampling were retained at the geology storage shed for reassay if required. Two pulps were made from the hammer-milled samples that had sample numbers ending in zero, i.e., every tenth sample. The letters "A" and "B" were added to these sample numbers and both were presented to the mine laboratory for assay The rejected hammer-milled pulp from the "A" sample was then split: one of these splits was sent to ALS, Townsville, Australia and the other to Classic Laboratories also in Townsville, Australia as check samples.

As part of the 2013 & 2015 resource estimate data and information were provided to Australian Mining Consultants (AMC) and to Skandus which provide evidence that the documented sampling protocols were carried out across the Property. They also include some of the QA/QC checks and results between the years 1978 and 2004 at Misima and nearby deposits, including Ewatinona. AMC reviewed the available QA/QC data in terms of validity of procedures and the spatial impact of results on the 2015 Mineral Resource. AMC concluded that:

- An industry standard QA/QC system was in place during early years of drilling, from 1978 to 1987
- There was an awareness and some focus of sampling limitations and protocols in 1990 and steps were taken to improve sample preparation
- A more comprehensive QA/QC system was in place from 1999 to 2004
- Drillholes from 2000–2004 appear to have had undergone regular QA/QC checks and are therefore likely to have a higher level of confidence. Although it would be desirable to have demonstrated higher



Criteria	JORC Code explanation	Commentary
		<ul> <li>precision in the samples, the QA/QC data indicates that the assays were unbiased.</li> <li>There is enough information on sampling and assaying protocols, supported by sufficient QA/QC and mine production data to conclude that the sample database is adequate to support Measured or Indicated Mineral Resource estimates.</li> <li>Skandus reviewed MML mine memos relating to QA/QC and concluded that there was an ongoing active program where issues were identified and efforts were taken to improve processes, this also included a site visit by Pitard (1990) which coincides with the site efforts to improve sampling limitations and protocols.</li> </ul>
		<ul> <li>Kingston 2019-2020</li> <li>Standard reference materials are inserted at a frequency of one per 20 samples.</li> <li>Field duplicates were inserted at a frequency of one per 20 samples.</li> <li>Blanks are inserted at a frequency of one per 50 samples.</li> <li>QA/QC performance is tracked using acQuire database software.</li> <li>Acceptable levels of accuracy have been achieved using these techniques.</li> <li>Intertek conducts periodic laboratory QA/QC including sizing tests and crushate / pulp duplicate tests Laboratory QA/QC also shows acceptable levels of accuracy.</li> <li>Gold values are also verified by assaying batches of pulps at an independent assay lab in Perth retuning high correlation with original assays.</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>	
		Skandus carried out its own validation checks on the dril hole files and original GEOLOG files provided after transfe and found there to be very few validation issues. Skandus also reviewed all Placer data and data protection SOPS



Criteria	JORC Code explanation	Commentary
Location of data	<ul> <li>Accuracy and quality</li> </ul>	•
points	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> <li>possible after drilling. Downhole surveys, to maintain a record of hole deviation, were conducted on angled cored holes after each 50 m was drilled. Packets containing downhole survey discs were present in several scanned images, indicating that an Eastman single shot camera was the survey tool in use at the time.</li> <li>During recent resource estimation work, it was established that all survey azimuths used in the GEOLOGs were magnetic, allowing easy adjustment of the down-the-hole survey data for the grid being used.</li> <li>In the recent diamond drilling completed by Kingston, down hole surveying was conducted with a collar setup check survey at 15metres down hole, and on intervals approximating every 30 metres as the hole is advanced using Reflex downhole survey equipment.</li> <li>All spatial data sets and the 2020 resource estimate are located with respect to GDA94 datum (Zone 56).</li> <li>Historical data is provided in either GDA94, AGD66, Truncated AGD or Placer local mine grid.</li> </ul>
		<ul> <li>A truncated AMG grid (AGD66) was used while the Ewatinona mine was in operation (8,000,000 was usually removed from AGD66 northings to reduce precision problems during grid conversions). During the drilling period there was an 8° difference between magnetic north and AGD66 in the Ewatinona area. A correction was made to measured magnetic drill hole azimuths and the resulting drill hole traces were cross checked against historical drill hole location plans.</li> <li>Topographic control was checked during 2015 by a new topographic survey conducted by WCB.</li> </ul>
		Kingston converted all historical spatial data sets to GDA94 Zone 56 using a 2-point planar conversion derived from a detailed land survey and rigorous review of geographic and spatial data sets against LiDAR topography and resurvey of relocated collars. All data translations are checked and verified at the time. The location of spatial data sets has been assessed as appropriate and logical with respect to the 3D topography and logical geographic features such as flat drill pads.



Criteria	JORC Code explanation	Commentary
		<ul> <li>AMC during the 2015 report reviewed the control with drill hole collars and end of mine surveys and found it was sufficient to support measured or indicated mineral resource estimates. An as-mined surface to deplete the resource was created from blast-hole collars.</li> <li>All Kingston 2019-2020 drill holes have been surveyed by PNG Land Surveys using high accuracy RTK GPS in PNG94 zone 56, with XYZ locations updated in the database. PNG94 is the same datum as GDA94.</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>Ewatinona within the central parts of the deposit has been significantly reduced due to the angled drill holes and orientated drill core.</li> <li>For the size of the deposit and expected mining block (and historical mining block), the spacing gives good coverage of the mineralised zone and at a suitable spacing to estimate blocks. Sample spacing has been taken into consideration for classification of the resource blocks.</li> <li>Samples were composited to 4m based on analysis by</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>MHG.</li> <li>Review of historical data from mine bench maps and reports, combined with orientated drill core data, concludes that the Kingston drill holes are orientated to minimise sampling bias.</li> <li>Historical drilling and some early Kingston drilling comprised as number of vertical holes that are interpreted to have poorly tested the steep dipping mineralisation and could potentially introduce a degree of bias.</li> <li>It is assessed that an adequate number of angled holes have been drilled into the core of the deposit to minimise this risk.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Placer had industry standard SOPS and protocols for governing sample security. Skandus interviewed previous senior technicians and Geologists from WCB and Placer as well as reviewed the SOP documents and found that sample security on historical samples was adequate, this is backed up by the physical remnants of material such as sample tags, lock ties, bags and drums used during the WCB campaign still in storage at the WCB site office.</li> <li>Kingston samples are placed in large polyweave bags that</li> </ul>

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Criteria	JORC Code explanation	Commentary
		are sealed with either a plastic zip tie or wire twist fastener. The contents of each bag and makeup of each batch is recorded in a ledger and digital and hard copy sample submission forms. Samples are submitted by air or sea freight from Misima to Lae and collected from Nadzab airport or Lae shipping wharf by Intertek staff. Samples are tracked via regular inspections and checks/counts along the logistics management chain. Sample submission forms and master sample register are used to track samples by batch submitted. Intertek provide sample receipt notices once received and checked in Lae. There were no other specific sample security protocols in place.
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</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>Misima Island is part of the Louisiade Archipelago within Milne Bay Province of PNG. It is situated in the Solomon Sea about 625 km east of Port Moresby, the capital of PNG. The site is located at an approximate latitude of 10° 40' South and longitude of 152° 47' E.</li> <li>The Property consists of a single Exploration Licence, (EL) 1747, comprising 53 sub blocks, covering a total area of 180 km<sup>2</sup>. This EL is valid up until the 20<sup>th</sup> March 2021. A two-year renewal will be applied for prior to this date, as completed on previous occasions. All conditions pertaining to compliance of the title have been met. The Property is located on the eastern portion of the island and includes the historic mining areas of Umuna and Quartz Mountain. There are no known impediments.</li> <li>Kingston and its subsidiary WCB Pacific Pty Ltd are in a JV with Pan Pacific Copper Ltd (PPC), Gallipoli Exploration (PNG) Pty Ltd, a subsidiary of WCB Pacific Pty Ltd, is the legal entity and tenement holder and is responsible for performing its obligations under the Mining Act 1992.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>1958–1964 Oceanic Mineral Development Pty Ltd, taken over by Pacific Island Mines (PIM) - Diamond drilling / adit development.</li> <li>1964–1967 Oceanic/Cultus Joint Venture (JV) - Trenching, diamond drilling 5 holes for 1,383m in 1965, IP survey, U/G sampling new adit, steam sediment sampling.</li> <li>1967 CRA Exploration Pty Ltd (CRAE) - Stream sediment sampling at point of entry of all rivers and streams into the ocean.</li> <li>1967–1969 PIM/Cultus Joint Venture (JV) - Stream sediment sampling, percussion drilling, diamond drilling.</li> <li>1969–1972 Noranda/PIM/Cultus JV - Noranda was operator diamond drilling 15 holes for 3,568 m at Mount Sisa copper anomaly, minor trenching at Umuna</li> <li>1975–1976 Meneses Explorations Pty Ltd - Grid Mapping, Sampling of old trenches.</li> <li>1977–1987 Placer/Meneses - JV, Placer was operator. Deep trenching, and channel sampling, mapping, RC and diamond drilling.</li> <li>1978– 1985 CRAE - Also in JV, withdrew in 1985.</li> <li>1982 - Meneses bought out of JV.</li> <li>1987 - Placer forms Placer, Government of PNG becomes 20% shareholder Mining development agreement signed.</li> <li>2012 – 2017 WCB Resource Ltd - Collection and collation of sampling information, historical documentation, sourcing and reconciling production blast hole data to drilled data and 2015 resource estimate, topographic</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>surveys to tie in topographic control, water levels, as mined surfaces and collar locations, converting Geolog drill hole data into a modern format, and carrying out QA/QC on the data and conversion with checking against analogue documents and photographs. Reviews of historical assay QA/QC. Work on validating and verifying historical data so it could be reliably used in a modern code compliant context. Compiling of historical information into NAT-INST 43-101 format for modern reporting. 3,669 auger ridge and spur soil samples, helimagnetic aeromagnetic survey with processing and interpretation (2,035 line kms of survey), 658 channel samples and geological mapping, analysis of structural measurements, comparative analysis of WCB channel sampling and Placer channel sampling to confirm validity of Placer data and drilling of 5 diamond holes into the Mt Sisa area.</li> <li>2018-2020 Kingston Resources Limited: Focussed exploration on Umuna, Umuna East, Misima North, and Quartz Mountain project areas. Building on compilation work by WCB, Kingston completed field mapping and sampling (rock chips, channels, auger) developing drilling targets. Ewatinona is a deposit within the Quartz Mountain Project area with work completed by Kingston focussed on increasing confidence in surface and subsurface geology as a key input to a mineral resource estimation.</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul> <li>Misima Island forms part of the Louisiade Archipelago which is a continuation of the Papuan Fold Belt of the Papuan Peninsula offshore eastwards through the Papuan Plateau. The oldest rocks on Misima are Cretaceous to Paleogene metamorphic rocks, which can be subdivided into the western Awaibi Association and the younger overthrust eastern Sisa Association that is host to the gold and copper mineralization. The two associations are separated by an original thrust fault with later extensional activation.</li> <li>Mineralisation deposit style on Misima Island is best described as Low Sulphidation Epithermal due to the veining and characteristics, the dominance of Ag Zn Pb Au Cu Mn geochemistry as well as complex alteration styles and geometry, and strong association with precursor porphyry Cu Au style alteration.</li> <li>Styles of mineralisation observed across Misima Island include multiphase hydrothermal breccia, stockworks both sheeted and three-dimensional, skarn, jasperoidal replacement, and poorly banded vein infill of quartz and carbonate with associated pyrite, galena, sphalerite, barite and minor tetrahedrite.</li> </ul>
		with that mined by Placer/Placer at Umuna. Data from multiple historical and recent sources has been reviewed and incorporated into developing higher confidence in the deposit geology including distribution of rock types, style and controls on mineralisation, and 3D structure architecture. Data sources comprise, mine bench mapping, technical and production



	Criteria	JORC Code explanation	Commentary
			reports, historical mapping that has been checked and verified in the field, comprehensive data compilations documented by WCB, and observations, data analysis and interpretation from recent diamond drilling.
			The Ewatinona deposit is dominated by brecciated porphyry units which are cut by faults trending in three major directions (northwest, west northwest and southwest) with steep north and north east dips. Mineralised structures can range from crackle brecciated porphyry with base metal sulphide and quartz-carbonate-base metal sulphide infill, to more well- defined fault breccia with stockwork veining and crackle brecciation haloes. Lithology does not appear to influence mineralisation and grade distribution within recent drilling and has not been used as a domain in resource estimation.
			Isotropic, unbiased, 3D implicit modelling of grade control data points maps out dominant structure trends of mineralisation in the open pit mined by Placer. Interpretation of planar surfaces from grade shells at 0.2, 0.3, 0.4, 1.0 and 2.5g/t Au, define a set of structures that are coincident with and supported by pit mapping by Placer, and Kingston. Highest grade shells are located at the intersection of interpreted structures. There is a general alignment with the steep north to northeast dipping structure trends determined from orientated drill core.
			Combining all data sets with orientated drill core data for mineralised veins and breccias defines the predominant structure trends in the deposit and foundation for the resource model. The Current interpretation is that Ewatinona mineralisation is open along strike and at depth.
) ] ) )	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:</li> <li>easting and northing of the drill hole collar</li> <li>elevation or RL</li> </ul>	<ul> <li>Exploration results not being reported.</li> </ul>
)		<ul> <li>(Reduced Level – elevation above sea level in metres) 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> <li>If the exclusion of this information is justified on the basis that the information is not</li> </ul>	
		Material and this exclusion does not detract from the	

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	Criteria	JORC Code explanation	Commentary
		understanding of the report, the Competent Person should clearly explain why this is the case.	
	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> <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>	Exploration results not being reported.
)	Relationship between mineralisation widths and intercept lengths	<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 hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	Exploration results not being 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</li> </ul>	Exploration results not being reported.



Criteria	JORC Code explanation	Commentary
	be limited to a plan view of drill hole collar locations and appropriate sectional views.	
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>	Exploration results not being reported.
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>	Exploration results not being reported.
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral 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>	Exploration results not being reported.



### Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database Integrity	<ul> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>Drilling of the Ewatinona zone was conducted between 1989 and 2000 by Placer and Placer. Barrick acquired Placer in 2006. Barrick provided the drillhole data to WCB which was used for the current Mineral Resource estimate. The data was converted to a Microsoft Access format by Mr R F Williams of WIZTECH Information Services, (WIZTECH). WIZTECH personnel had a long history with Placer and were familiar with the data. The assay data loaded from the supplied GEOLOG files was checked for quality using standard statistical analysis.</li> <li>In addition, production blasthole data for the Ewatinona deposit provided by the Centre for Computational Geostatistics, University of Alberta, was used as a data set for completing validation checks against the new resource model as well as providing additional control data for the "as mined" surface. Additional support and documentation including original drill logs, assay sheets, survey sheets, core photographs, monthly production records, monthly exploration reports, reconciliation reports, site survey data, mining consultant's reports, mill records, environmental data and additional technical data were also located by WCB in Cairns Australia and were available for review and inclusion in the assessment of data quality.</li> <li>Database integrity was audited and confirmed by AMC during a Nat Inst 43-101 report, this has included checking against assay files, core photography, erconciliation of blast hole vs drill hole data, a review of variography.</li> <li>Skandus (2017) reviewed the work carried out by Wiztech and AMC and carried out its own validation and verification against photos and original snap shots of GEOLOG files and handwritten geology files and confirms their findings. Skandus had experience with GEOLOG whilst working at Pancontinental mining during the 1990s.</li> <li>Drilling data by Kingston in 2019 and 2020 was uploaded into the acQuire database via CSV files.</li> <li>Kingston have completed a review of the 2019-2020 geolo</li></ul>
<i>Site visits</i>	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been</li> </ul>	<ul> <li>Stuart Hayward in the role of FIFO Exploration Manager and Chief Geologist was in regular attendance on site overseeing and managing geology and drilling and sampling activities since April 2019. Mr. Hayward is familiar with carbonate-base metal-Au mineral systems and the Umuna</li> </ul>



Criteria	JORC Code explanation	Commentary
Geological	<ul> <li>undertaken indicate why this is the case.</li> <li>Confidence in (or conversely,</li> </ul>	<ul> <li>and Ewatinona deposits, having spent significant time reviewing data sets and completing on ground traverses of all prospect and work areas within the Misima Gold Project.</li> <li>Mr De-Vitry has not made any site visits and completed the Resource estimation under guidance and in cooperation with Mr. Hayward.</li> <li>The 2020 model is supported by comprehensive field and</li> </ul>
	<ul> <li>the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>digital data collection, compilation, and analysis by Kingston geologists, combined with comprehensive compilation and review by WCB field geological. Interpretation and understanding controls on mineralisation at Ewatinona within the central parts of the deposit that encompasses the mineral resource has been significantly reduced due to this work and recent program of overlapping angled drill holes.</li> <li>Geological understanding is commensurate with classification as indicated and inferred.</li> <li>Structural controls on mineralisation are interpreted and inferred from mapping drill pad and access cuttings, orientated drill core, pit mapping by Cyre 1989 on the 100mRL bench, Placer mining production and annual reports, and implicit models of closed spaced grade control data.</li> <li>All data sources support mineralisation being hosted by a series of WNW, NW and broadly E-W trending, steep to moderate north to NE dipping structures that can be individual structures, or stacked towards the NE, and intersecting within the footprint of the Ewatinona pit. Highest grades occur as pods and shoots at the intersection of structures and on WNW trending structures.</li> <li>A grade shell was deemed necessary to reducing the smearing/mixing of weakly mineralised and mineralised material during kriging of Au. Implicit models of gold from drill holes were created utilising the interpreted structural controls to guide the construction of an RBF function in Leapfrog. The resultant 0.2g/t Au shell is considered to appropriately reflect the geometry and spatial distribution of mineralised from doiled in most logged intervals in the original drillhole GEOLOGs. Kingston drill holes are also logged for oxidation and codel using the Placer code system and a combined simplified oxide logging data set provided for modelling. An oxidation model was built in Leapfrog. Some inconsistencies are observed in logging in some drillholes that requires review for future work. Oxide, transitional and fresh surfaces have been gene</li></ul>



Criteria	JORC Code explanation	Commentary	
		confirmed the steeper dips and variable trends that are reflected in the modelled 0.2g/t Au shell.	
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.	<ul> <li>The foundation geological model built in Leapfrog encompasses an area 1.7km (N-S) x 1.5km (E-W) and 580m in RL.</li> <li>The block model extent encapsulates the mineralised structure model defined by the 0.2g/t Au shell that sits within the volume of the geology model, and has slightly reduces extents due to its geometry.</li> <li>The resource is constrained by Whittle pit shells that have a footprint of 1.1km NW-SE, 850m NE-SW, and 200m in RL.</li> <li>Pit shells have been optimised based on the block model within the 0.2g/t Au domain</li> <li>The resource is divided into three oxide domains that are superimposed on a granitic unit that contains mineralisation within and adjacent to throughgoing structures defined by the 0.2g/t Au shell. Oxidised and Transitional material have been combined for external reporting.</li> <li>Parts of the deposit crop out in adjacent drainages and road cuts, as does parts of the remanent mineralisation in the bottom of the existing pit and in the pit walls. There is water and minimal back fill cover where some pit slopes have been reduced.</li> </ul>	
Estimation and modelling techniques	<ul> <li>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.</li> <li>The availability of check estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage</li> </ul>	<ul> <li>The gold and silver block grade were estimated using Ordinary Kriging with Isatis software. Pb, Zn and Cu estimates were determined by inverse distance squared interpolation.</li> <li>Ordinary Kriging is an appropriate method to use if top cutting or outlier restriction is carried out and the data is domained.</li> <li>The base of oxidation and transitional was treated as a soft boundary during estimation.</li> <li>The estimation parameters for Au and Ag are as follows: <ul> <li>Rotated search without quadrants;</li> <li>Search dimensions of 170m x 60m x 40m;</li> <li>Search strikes to 115° and dips 75° to the NNE. The plunge is horizontal;</li> <li>Minimum of 1 and a maximum of 16 composites;</li> <li>Maximum of 4 composites per drill hole;</li> <li>Anisotropic search (i.e. search distances are relative to the search ellipse);</li> <li>Domain boundaries are treated as hard during estimation;</li> <li>All composites located within a block must be used to estimate that block;</li> <li>All blocks are estimated in a single pass; and</li> <li>Discretisation is 3 x 3 x 3.</li> </ul> </li> <li>The minimum search of 1 composite is low for a kriged estimate and minimums of between 4 to 8 eight would be more typical. The reason for the low minimum is that there are numerous meshes in the peripheries of the mineralisation that only contain one composite.</li> </ul>	



Criteria	JORC Code explanation	Commentary
Moisture	<ul> <li>characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> <li>Whether the tonnages are estimated on a dry basis or</li> </ul>	<ul> <li>to 2.5m). This block size is similar to previous estimates used during production and is reasonable given the drill spacing and support from blast-holes.</li> <li>Outlier restrictions cap higher grade assay values when they are outside a specified distance from the block being estimated. The outlier restriction distance is 15m.</li> <li>The outlier restriction grades are as follows:</li> <li>For the mineralised domain 4.5 ppm Au and 20 ppm Ag; and</li> <li>For the unmineralised domain 0.5 ppm Au and 9ppm Ag.</li> <li>The final block model was reviewed:</li> <li>Visually in section against composites;</li> <li>Statistically by comparing declustered composites to the mean block grades by domain; and</li> <li>Using swath plots.</li> </ul>
Cut-off	with natural moisture, and the method of determination of the moisture content.	
oarameters	<ul> <li>The basis of the adopted cut- off grade(s) or quality parameters applied.</li> </ul>	
Mining factors assumptions	or 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	<ul> <li>The mining scenario for Ewatinona is consistent with that used to evaluate the deposit in 2017.</li> <li>Gold cut-off grade and pit shell for reporting (USD\$1700) have been modified for the 2020 Mineral Resource update.</li> <li>Any internal dilution has been accounted for with the modelling and as such is appropriate to the block size.</li> <li>KSN has not yet completed a standalone scoping or prefeasibility study on the Ewatinona resource model. Though Ewatinona has been considered as part of a Misima wide scoping study.</li> <li>KSN is assuming extraction will be consist of conventional large-scale open pit methods capable of mining between 5Mtpa and 8Mtpa using an ore-waste cut-off grade of approximately 0.4g/t and bulk mining techniques.</li> <li>Minimum mining dimensions are expected to be in the order</li> </ul>



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	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.	dimension). The block sizes used in the model are considered appropriate for this style of mining. These assumptions are based upon Placer's previous experience mining at Ewatinona and consideration of the distribution of mineralisation.
Metallurgical factors or assumptions	<ul> <li>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.</li> </ul>	<ul> <li>There are no changes or modifications to metallurgical factors or assumptions from the 2017 update.</li> <li>Metallurgical amenability is based on information from the past operation by Placer. WCB did not carry out any new studies.</li> <li>Gold process recoveries were around 92% for the first half of the mine life falling to 90% in the second half then 88% off stockpiles. Process recoveries of 92% for gold and 50% for silver have been used for pit optimisation.</li> <li>The Placer treatment plant consisted of a coarse ore dump pocket, SAG/Ball mill grinding circuit, leaching and carbon-in-pulp (CIP) circuits and Zadra stripping circuit. Zinc precipitation of precious metals was then carried out and dore was produced in an oil-fired furnace. CIP tailings were washed in a three-stage counter-current decantation circuit before disposal to the ocean floor via a seawater mix tank. Power was supplied from a 20 MW diesel generating station. Fuel costs represented an average 12.5% of total operating costs.</li> <li>There were some initial issues early in the operation due to high silver to gold ratios causing large carbon stripping. The clay component of Misima ore resulted in relatively high levels of lime for protective alkalinity which needed to be shipped in from Malaysia.</li> <li>It is assumed that there will be no other significant problems recovering the gold.</li> <li>No penalty elements identified in work so far.</li> </ul>
Environmental factors or assumptions	<ul> <li>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</li> </ul>	<ul> <li>Environmental factors and assumptions have not been changed or modification for the 2020 Mineral Resource update.</li> <li>The area lies within hilly terrain with narrow watercourses and is close to the coast.</li> <li>The area is covered with secondary vegetation.</li> <li>There are no existing environmental liabilities associated with the property. Previous liability associated with the mining operation ceased upon the surrender of SML1 which was completed in April 2012.</li> <li>Placer adopted a continuous rehabilitation approach to the staged operation. Environmental data including site sampling has been sourced and is used for baseline studies.</li> <li>During production CIP tailings were washed in a three-stage counter-current decantation circuit before disposal to the ocean floor via a seawater mix tank, one valley was also used for low grade waste. KSN has not yet considered how they will deal with future tailings.</li> <li>Ongoing base line water and sediment sampling and testing on a monthly basis show no degradation of water quality or</li> </ul>



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	impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	anomalous geochemistry or pH due to Kingston exploration and drilling or the rehabilitated mine workings and operational areas.
Bulk density	<ul> <li>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.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the</li> </ul>	<ul> <li>Bulk density at Misima is affected more by weathering than by rock type.</li> <li>Bulk density determinations are based on measurements on large pieces of PQ and HQ drill core (measured volume and dry weight. The following values are applied for each material type, Oxide 2.34, Transitional 2.45 and Fresh 2.55.</li> </ul>
	evaluation process of the different materials.	
dassification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of</li> </ul>	<ul> <li>understanding and continuity, and a contiguous assessment of quantitative variable including sample spacing, grade continuity, QA/QC, slope of regression, block variance, the average distance to samples used to estimate a block, and sensible mining depths.</li> <li>Due to a greater degree of confidence in the current geological model and 3D continuity of mineralisation, both Inferred and indicated resources have been classified.</li> </ul>
	<ul> <li>input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>The classification appropriately reflects the Competent Person's knowledge and view of the deposit.</li> </ul>
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	No new audits or reviews completed.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach	• The relative accuracy and confidence level in the Mineral Resource estimates are in line with the generally accepted accuracy and confidence of the nominated Mineral Resource categories. This has been determined on a qualitative, and semi-quantitative, basis, and is based on the Competent



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	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 tonnages, which should be 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.	<ul> <li>Person's</li> <li>The geol and the of to a reas</li> <li>The Min globally, due to the interpreta</li> <li>Local pro- not comp</li> </ul>

Person's experience with similar deposits.

- The geological nature of the deposit, the modelling method and the composite/block grade comparison lend themselves to a reasonable level of confidence in the resource estimates.
- The Mineral Resource estimates are reasonably accurate globally, but there is some uncertainty in the local estimates due to the current drill hole spacing and uncertainty in the interpretation.
- Local production data is available for local comparison but not completed at this stage.