

Lihir PFS supports gold production growth to 1Mozpa+ from FY24

- Lihir Phase 14A PFS indicates potential for growth and large scale, long life, low cost production
- Confirms Lihir's pathway to become a 1Moz+ gold producer for at least 10 years from FY24¹
- \$179m investment projected to deliver outstanding return metrics of 37% IRR & 2.6 year payback^{2,3,4}
- Increases Lihir's Ore Reserves by 1 million ounces⁵
- Project implementation to enhance operational flexibility and risk management
- Potential to deploy Phase 14A mining techniques in other parts of the mine to unlock more value
- Feasibility Study expected to be completed in the second half of FY22⁶

Newcrest Mining Limited (ASX, TSX, PNGX: NCM) is pleased to announce that the Newcrest Board has approved the Lihir Phase 14A Pre-Feasibility Study (the Phase 14A Study), enabling the commencement of the Feasibility Study and Early Works Program.

The Study focuses on extending the Phase 14 cutback and safely steepening the walls of the pit utilising civil engineering techniques to access existing Indicated Mineral Resources that would have otherwise been inaccessible through standard mining techniques. The Study integrates Phase 14A's future mine design and sequence into Lihir's mine plan and establishes the expected costs, schedule and sustainable production rate.

Newcrest Managing Director and Chief Executive Officer, Sandeep Biswas, said "The findings of our Lihir Phase 14A Pre-Feasibility Study accelerate the realisation of our aspiration for Lihir to be a 1 million ounce plus per annum producer from FY24, which will benefit landowners, all Lihirians and PNG. Phase 14A increases Lihir's Ore Reserves, brings forward gold production and improves operational flexibility by establishing an additional independent ore source. The Study also highlights the opportunity for Phase 14A techniques to be applied to future cutbacks at Lihir, potentially unlocking more value. We have also confirmed the deferral of the need for the Seepage Barrier to Q2 FY26, with the potential to further defer the timing of the barrier."

Summary of Phase 14A Study Findings^{2,3,7}

The Phase 14A Study has identified the following:

- Estimated project capital expenditure of \$179 million
- Internal Rate of Return (IRR) of 37% (real, after tax)
- Payback of 2.6 years⁴
- Net Present Value (NPV) of \$284 million⁸
- Mill feed increase of 483koz contained gold, with ~400koz of additional gold produced from FY23 to FY26
- Additional Life of Mine (LOM) gold production of 965koz

¹ The production targets underpinning the estimates are contained in the column titled "LOM" in the table on Page 2 under the heading "Table of Key Study Findings". The production target is based on the utilisation of 100% of Lihir's Ore Reserves, being 4Moz Proved and 19Moz Probable Ore Reserves, as set out on Page 9, which have been prepared by a Competent Person in accordance with Appendix 5A of the ASX Listing Rules.

² The Study has been prepared with the objective that its findings are subject to an accuracy range of $\pm 25\%$. The findings in the Study and the implementation of the Phase 14A Project are subject to all the necessary approvals, permits, internal and regulatory requirements and further works. The estimates are indicative only and are subject to market and operating conditions. They should not be construed as guidance.

³ The production targets underpinning the Study estimates are contained in the column titled "Phase 14A" in the table on Page 2 under the heading "Table of Key Study Findings". The production target is based on the utilisation of ~4% of the total Lihir Ore Reserves, being 4Moz Proved and 19Moz Probable Ore Reserves, as set out on Page 9, which have been prepared by a Competent Person in accordance with Appendix 5A of the ASX Listing Rules.

⁴ Payback is the earliest date that net accumulated free cash flow is equal to zero. This is calculated from first commercial production which is defined as the date that Phase 14A is forecast to gate to execution.

⁵ After mining depletions from 1 January 2021 to 30 June 2021 and the conversion of the Phase 14A Indicated Mineral Resource to Probable Ore Reserves. Refer to Page 9 for a summary of the Lihir Ore Reserve.

⁶ Subject to market and operating conditions and no unforeseen delays (including any delays due to COVID-19).

⁷ As Lihir's functional currency is US dollars, the Studies have been assessed in US dollars.

⁸ Using a discount factor of 6.0% (real).

The Feasibility Study is expected to be completed in the fourth quarter of FY22⁶, with the expenditures and study scope expected to include:

- Early Works expenditure of \$47 million for fleet procurement and initial bench establishment
- Trial works for ground support anchors to validate design, costs and schedule
- Additional drilling and test work to validate ore deposit knowledge

The Lihir Ore Reserves estimate has been updated to include the conversion of the Phase 14A Indicated Mineral Resource to Probable Ore Reserves, increasing Lihir's Total Ore Reserves by 1Moz to 23Moz as at 30 June 2021⁵.

Mining of Phase 14A is expected to take place between FY22 and FY26. Ore mined from this Phase will replace lower grade ore feed to the processing plant, with an initial 13Mt of high and medium grade ore from Phase 14A planned to be fed between FY22 and FY26. Lower grade material will be stockpiled and fed progressively over the remaining LOM. This is expected to deliver an additional 965koz of gold production over the LOM.

In addition, Newcrest has completed its Seepage Barrier Feasibility Study, which enables further definition of the expected construction costs and schedule. The findings from the project field trials indicate that the Seepage Barrier can be constructed using hydromill cutters and grouting methods. Approval of the Seepage Barrier Feasibility Study to move to Execution has been deferred until FY23, in line with the findings of the Lihir Mine Optimisation Study (LMOS) which established that the eastern limits of Phases 16 and 17 could be moved further east, deferring the need for the Seepage Barrier by ~18 months to Q2 FY26.

Table 1: Key Phase 14A Study Findings⁷

Area	Measure	Unit	Study Outcomes	
			Phase 14A ^{2,3}	LOM ⁹
Production	Ore milled / milling rate (max)	Mtpa	15.5	15.5
	Ore milled	Mt	-	310
	LOM	Years	5 ¹⁰	22
	Ore mined	Mt	20.5	236
	Average gold grade	g/t	2.4	2.3
	Gold produced	Moz	1.0	19
Capital	Production stripping (capitalised)	US\$m (real)	111	
	Sustaining capital	US\$m (real)	69	
	Total capital	US\$m (real)	179	
Economic assumptions	Gold price	US\$/oz	1,500	
Financials¹¹	NPV ⁸	US\$m (real)	284	
	IRR	% (real)	37	
	Payback period ⁴	Years	2.6	

⁹ The production targets are based on the utilisation of 100% of the total Lihir Ore Reserves, being 4Moz Proved and 19Moz Probable Ore Reserves, as set out on Page 9, which have been prepared by a Competent Person in accordance with Appendix 5A of the ASX Listing Rules.

¹⁰ Based on ore mined of 20.5Mt for the period FY22-26.

¹¹ Financial estimates are based on the production targets shown as "gold produced" in the Phase 14A column in the table above.

Phase 14A Overview²

In February 2021, Newcrest announced the findings of the LMOS which included the identification of a new, essentially brownfield opportunity called Phase 14A. The Phase 14A Study focused on extending the Phase 14 cutback and safely steepening the walls of the pit by utilising civil engineering techniques to access existing Indicated Mineral Resources which would have otherwise been inaccessible through standard mining techniques. The Phase 14A cutback is expected to provide an additional mining front enabling further flexibility for fresh competent ore feed. The Phase 14A cutback is fully permitted and is within the existing mine lease.

Field trials of the wall support technology are planned for the December 2021 quarter⁶, with long lead materials to be ordered and the engagement of specialist contractors in progress.

The addition of Phase 14A into the Lihir mine plan accelerates Newcrest's aspiration for Lihir to be a 1Moz+ per annum producer from FY24.

Mining of Phase 14A is expected to take place from FY22 to FY26 and include:

- Total ex-pit mining of 34Mt, including 13Mt of high and medium grade ore at an average of 3g/t, which will displace lower grade ore (mostly stockpile) that would otherwise have been processed in the mill
- An uplift in the total mill feed grade and an additional 483koz of gold in feed and 400koz recovered gold over FY23 – FY26³

Material Class	Tonnage (Mt)	Au Grade (g/t)
High Grade (HG)	4.5	4.5
Medium Grade (MG)	8.5	2.2
Low Grade (LG)	7.5	1.3
Waste	13.5	
Total	34	
Stripping Ratio (Waste: Ore)	0.66	

Table 2: Phase 14A Inventory Summary³

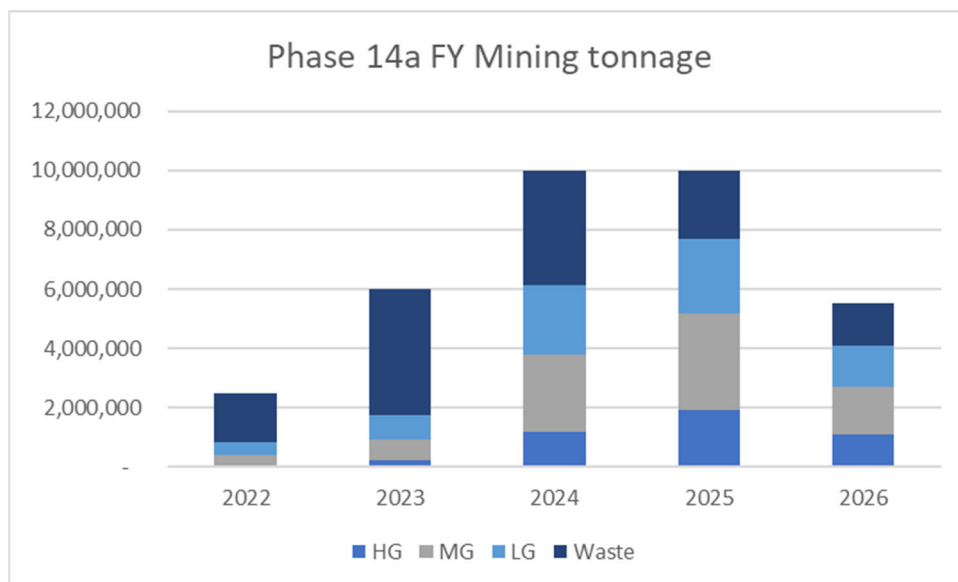


Figure 1: Phase 14 Mining ore production by financial year³

Backfilling the cutback will occur after the completion of mining and will act as a buttress supporting long-term stability of the highwall.

A program of infill resource definition drilling and trial installations of the ground anchors is underway and will be completed in FY22. This program is expected to improve resource definition, further reducing project risk.

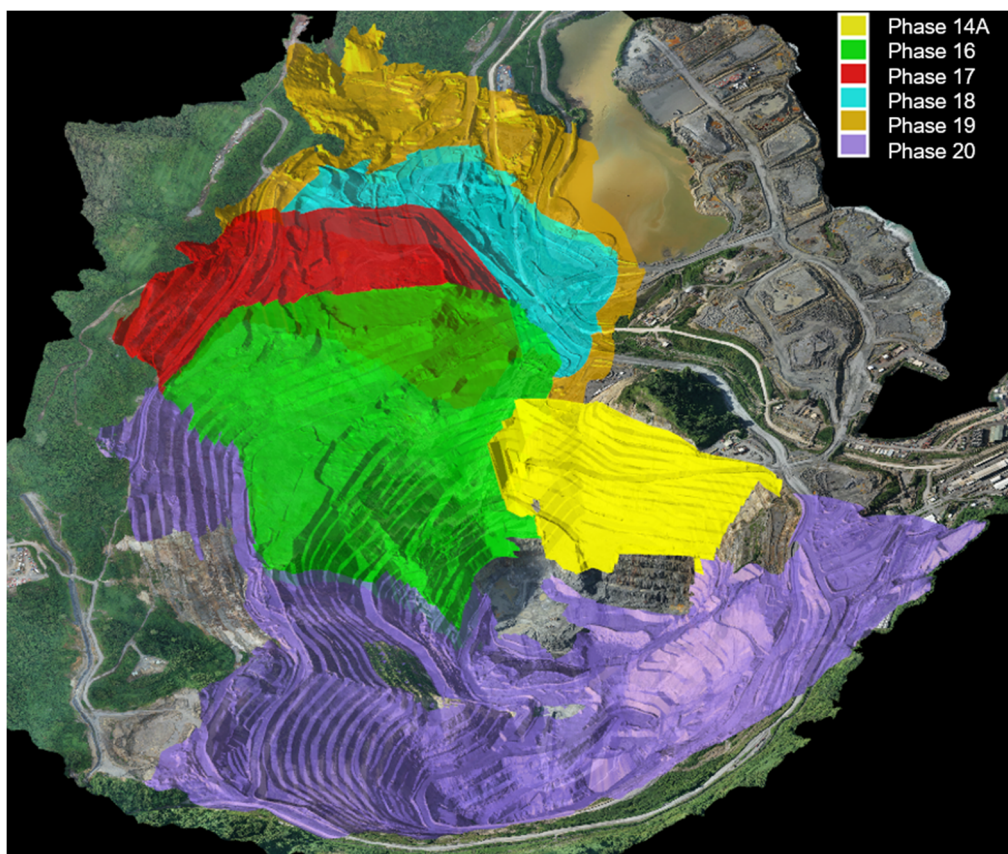


Figure 2: Lihir Mine cutbacks including Phase 14A

The Phase 14A design utilises civil engineering techniques, in conjunction with existing mining practices, to increase pit wall angles. The upper Argillic horizons without ground support typically have an unsupported slope angle of $\sim 45^\circ$ which has been increased to $\sim 77^\circ$ using soil anchors to provide stability. The soil anchors will be installed in the upper benches of the cutback to support the steeper wall angles in these areas. The slope angles of the lower benches will be similar to the existing walls in Phase 14. The increase in pit wall angle enables access to ore within the current permitted pit shell.

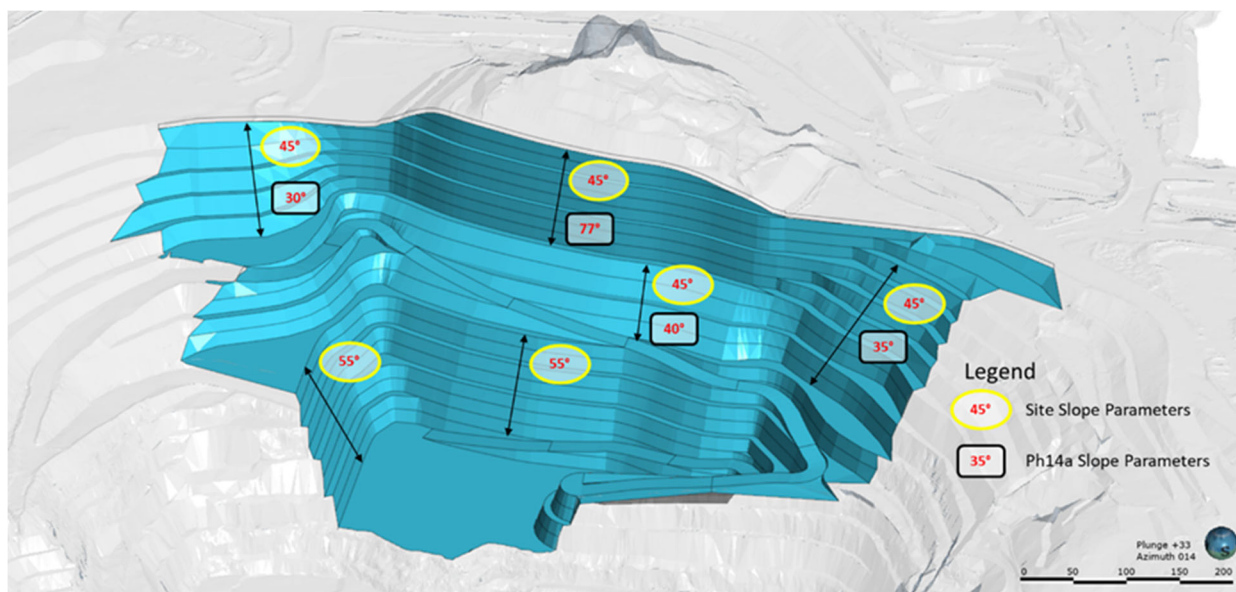


Figure 3: Phase 14A design showing current vs supported design slopes

The soil anchors provide ground support in the form of multi-strand anchors with shotcrete and/or high tensile wire mesh as face support in the Argillic and upper Epithermal zones.

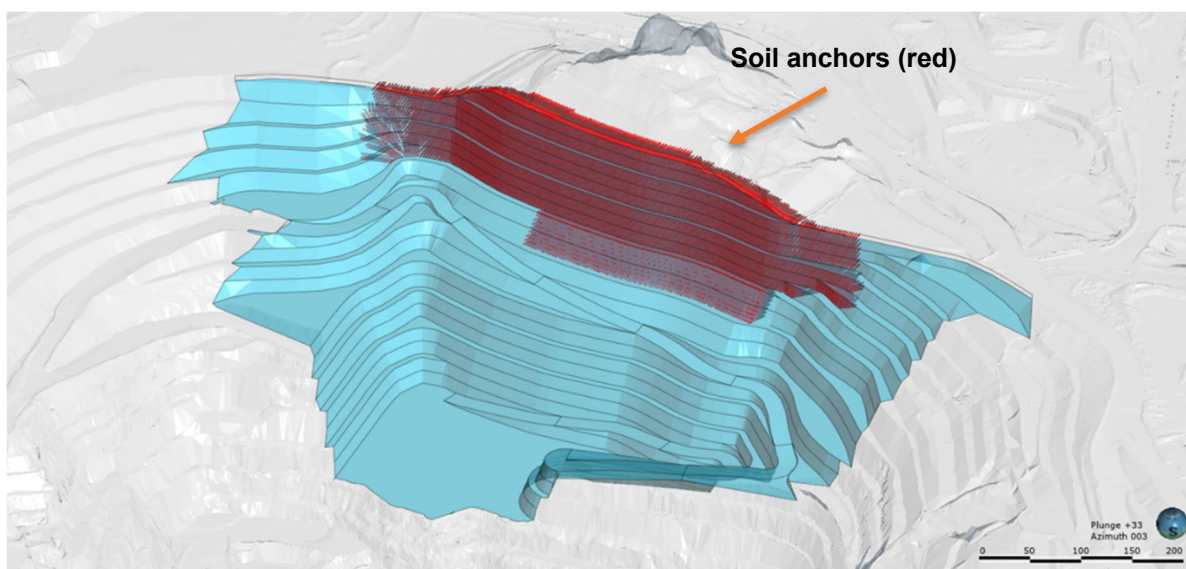


Figure 4: Phase 14A wall stabilisation design

To integrate with the civil construction, mining will be conducted by a dedicated mining fleet which will comprise a small excavator and dump trucks mining 3m flitches. The 3m flitches are required to provide a working platform for installation of soil anchors at 3m vertical spacings.

The Lihir base case gold production schedule projects mining rates to increase up to 50Mtpa over the coming years and an average milling rate of 15.5Mtpa⁹. Ore from Phase 14A is expected to be mined between FY22-26 and will be processed over the LOM.

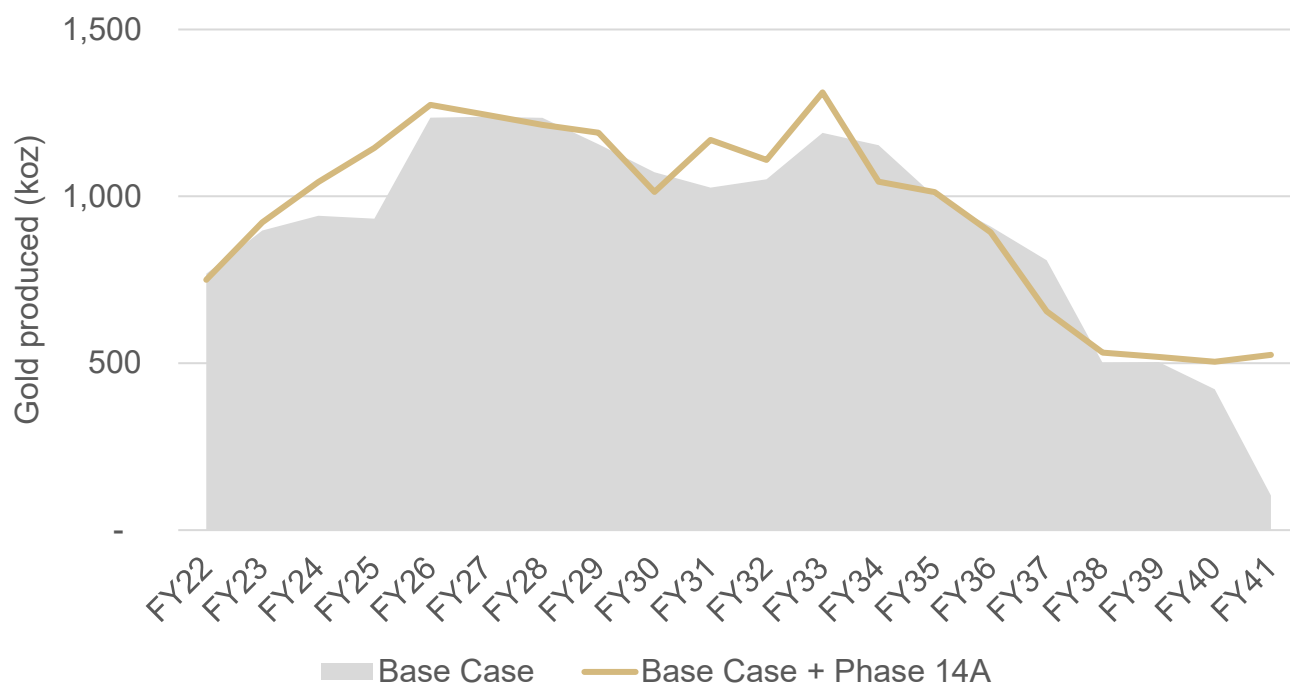


Figure 5: Lihir LOM indicative gold production profile⁹

Base Case Expit Mining to 50Mtpa

Mining rates for Lihir are expected to increase (as identified in the LMOS) over the coming years through a combination of equipment capacity and mining efficiency projects. Additional mining capacity is expected to be delivered through increased truck availability as a result of a program of truck re-builds and the replacement of primary dig units. This program is currently underway and is scheduled to be completed by December 2021⁶.

Mine efficiency improvements identified in the Study include improved fleet utilisation, which is expected to be achieved by increasing operator availability and improving dispatch tactics to reduce equipment delays.

Process Plant Improvements¹²

Newcrest is currently implementing numerous throughput improvement initiatives which are targeting the achievement of a process plant throughput rate of 15.5Mtpa from FY24. Lihir has previously demonstrated annualised milling performance rates of ~16Mtpa during Q4 FY18 and Q4 FY19.

Recovery Improvements

Recovery improvements are expected to be achieved through a combination of increasing mill feed grades, improved feed blends and recovery improvement projects that are currently in progress. Phase 14A is expected to provide additional fresh ore to the mill, offsetting lower grade and lower performing recovery material types.

The Front End Recovery project is expected to deliver increased recoveries from the beginning of FY23, with further studies assessing recovery improvements underway.

Project Investment

The Phase 14A Project requires a total capital investment of \$179 million and comprises:

Activity	\$m ^{2,7}
Study and trial costs	22
Mining and ancillary fleet (Excluding contractor ground support equipment)	46
Production stripping cost (capitalised)	111
Total	179

Production Stripping

Pre-production stripping of Phase 14A waste material is expected to commence in the second half of FY22⁶. Due to the initial civil works requirements and available bench space, there is expected to be a ramp up of the mining rate to a peak of ~1Mtpa per month through FY23 and FY24.

Phase 14A has a very low strip ratio of 0.66 and as such will start producing HG and MG ore within six months from the commencement of mining. This is expected to provide significant HG mill feed through FY24 and FY25, lifting intended production rates to 1Moz+ per year from FY24, prior to completion of pre-stripping in Phase 17⁹.

¹² Throughput targets are subject to market and operating conditions and no unforeseen circumstances occurring. They should not be construed as production guidance.

Indicative Mine Production Profile (Includes Phase 14A)^{9,13,14,15}

Year	Sources	Total Material Movement (Mt) ¹⁶	Waste (Mt)	Tonnes to Stockpile (Mt)	Ex-Pit Tonnes Fed (Mt)	Stockpile Tonnes Fed (Mt)	Plant Feed (Mt) ¹⁷	Average Gold Grade (g/t)
FY22-24	Lienetz, medium/low grade stockpiles and pre-strip	200 - 220	100 - 120	15 - 25	25 - 35	10 - 20	40 - 50	2.4 - 2.6
FY25-27	Lienetz, Kapit, medium/low grade stockpiles and pre-strip	210 - 230	90 - 110	25 - 35	25 - 35	10 - 20	40 - 50	2.8 - 3.0
FY28-30	Lienetz, Kapit, low grade stockpiles and pre-strip	160 - 180	80 - 100	5 - 15	10 - 20	30 - 40	40 - 50	2.4 - 3.0
FY31-33	Lienetz, Kapit, Minifie and low grade stockpiles	140 - 160	40 - 60	20 - 30	25 - 35	10 - 20	40 - 50	2.6 - 3.0
FY34-36	Lienetz, Kapit, Minifie and low grade stockpiles	130 - 150	50 - 70	10 - 20	25 - 35	10 - 20	40 - 50	2.0 - 2.3
FY37-39	Minifie and low grade stockpiles	50 - 70	0 - 10	0 - 10	0 - 10	40 - 50	40 - 50	1.3 - 1.5
FY40-42	Minifie and low grade stockpiles	30 - 50	0 - 10	0 - 10	0 - 10	25 - 35	25 - 35	1.2 - 1.3
FY43+	Remaining Reserves subject to ongoing study							

Metal Price and Exchange Rate Sensitivity Analysis^{2,3,7}

The IRR of the Phase 14A Project will vary according to the gold prices realised. Base case assumptions include a gold price of \$1,500/oz.

The table below outlines how the estimated Base Case Phase 14A Project IRR of 37% varies using different price assumptions:

Scenario	Assumption	IRR
Gold price (\$/oz)	1,200	22%
	1,800	51%

¹³ Indicative only and should not be construed as guidance. Subject to market and operating conditions, regulatory and landowner approvals and further studies.

¹⁴ Based on the Company's knowledge and good faith assumptions at the release date of this document. The indicative mine plan will be updated on an annual basis, or sooner if there are significant changes in the underlying assumptions.

¹⁵ Indicative estimates are provided on a Base Case basis. Further optionality and potential upside exists in relation to the operation, with there being a number of projects and studies in progress to pursue these.

¹⁶ Includes sheeting material and crusher rehandle.

¹⁷ Plant feed = Ex-pit + Stockpile feed.

Seepage Barrier Feasibility Study Update¹⁸

The development of the Kapit orebody requires construction of a seepage barrier to cut off ocean water inflows from Luise Harbour to the open pit as shown in Figures 6 and 7.

The LMOS defined a base case for the Lihir mine plan which found that through further geotechnical analysis, the eastern limits of Phases 16 and 17 could be moved further east, deferring the need for the Seepage Barrier by 18 months to Q2 FY26 to coincide with mining Phase 18.

Additional mining studies are underway to identify further options to delay timing and/or alter the scope for the Seepage Barrier, including:

- Kapit Pit Slope Optimisation (steepening of pit walls using conventional methods)
- Installation of a mini seepage barrier to access Phase 18 without the need for the full seepage barrier
- Combined pit slope steepening with a mini seepage barrier

The Seepage Barrier Feasibility Study has further defined the technical elements, cost and execution of the Seepage Barrier. It has determined:

- A cut-off wall can be constructed in line with the designed method using standard hydromill cutters and grouting methods with a sea water slurry cooling system and confirmation of the concrete mix
- An expected capital cost of US\$569 million⁷
- Construction duration of approximately 72 months

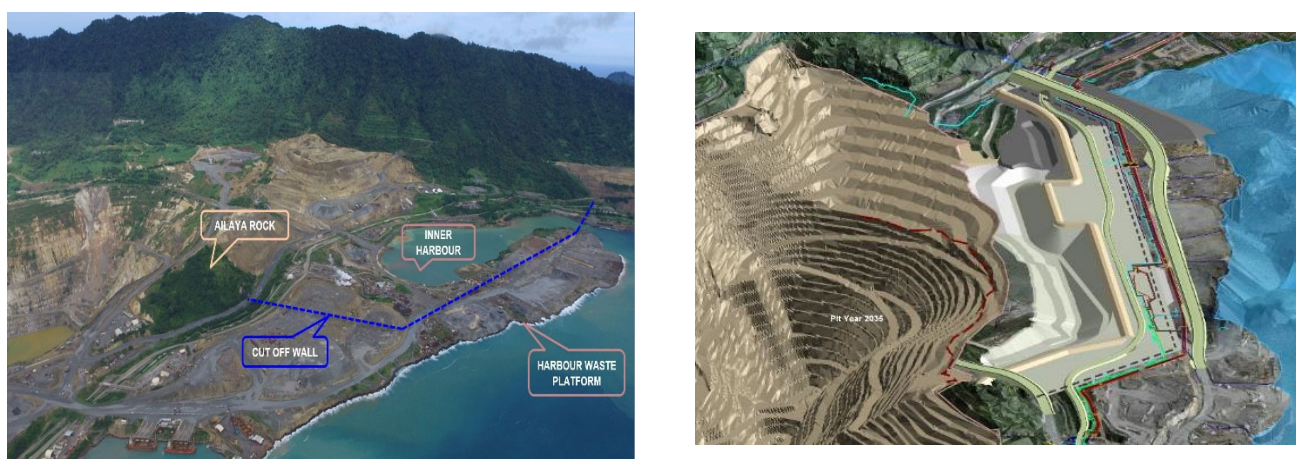


Figure 6 & 7 – Cut of wall Alignment and Seepage Barrier / Kapit Pit at EOM

Estimated Development Capital Profile^{7,18}

	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Total
Stage 1 – Cut-Off Wall (\$m)	30	74	194	52	-	-	-	350
Stage 2 – Seepage Control Berm (\$m)	-	-	-	35	95	70	19	219
Total (\$m)	30	74	194	87	95	70	19	569

¹⁸ The Seepage Barrier Feasibility Study has been prepared with the objective that its findings are subject to an accuracy range of $\pm 15\%$. The findings in the Study and the implementation of the Lihir Seepage Barrier Project are subject to all the necessary approvals, permits, internal and regulatory requirements and further works. The estimates are indicative only and are subject to market and operating conditions. They should not be construed as guidance.

Lihir Mineral Resource¹⁹

The Lihir Mineral Resource has been updated for mining depletion to 30 June 2021 from that reported in the Annual Mineral Resources and Ore Reserves Statement as of 31 December 2020. All other assumptions remain unchanged. A summary of material assumptions is included in Appendix 1, JORC Table 1. It is reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 (JORC Code). Mineral Resources are reported inclusive of Ore Reserves. Mineral Resources that are not Ore Reserves do not have demonstrated economic viability.

	Mineral Resource	Gold	
	Mt	g/t	Moz
Measured Mineral Resource	63	2.0	4.0
Indicated Mineral Resource	530	2.3	39
Total Measured and Indicated	590	2.2	43

	Mineral Resource	Gold	
	Mt	g/t	Moz
Inferred Mineral Resource	67	2.3	4.9

Lihir Ore Reserve¹⁹

A summary of material assumptions is provided below and included in Appendix 1, JORC Table 1. There are no material differences between the definitions of Probable Ore Reserves under the JORC Code and the equivalent definitions under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves.

	Ore Reserve	Gold	
	Mt	g/t	Moz
Proved Ore Reserve	63	2.0	4.0
Probable Ore Reserve	250	2.4	19
Total Ore Reserve	310	2.3	23

Material Assumptions for Ore Reserves

Lihir is an operating open pit mine on Lihir Island, and the Study incorporates learnings from operational execution to date. Work is progressing on a Feasibility Study for the Phase 14A cutback and any adjustments to the Ore Reserves statement will be made following the completion of the Feasibility Study.

¹⁹ Data is reported to two significant figures to reflect appropriate precision in the estimate and this may cause some apparent discrepancies in totals.
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Ore Reserve Classification

All of the in-situ Probable Ore Reserve is based on Indicated Mineral Resources. The Proved Ore Reserve is based on Measured Mineral Resources defined for known and quantified low grade stockpiles. The in-situ resource classification is based on an assessment of geological confidence as a function of geological and mineralisation continuity.

Mining Method

Current mining activity at Lihir is via conventional truck and shovel operation, with offshore barge disposal of waste rock and land based and in-pit stockpiling and reclaim of lower grade ore.

Ore Processing

Ore processing at Lihir involves the main operations of crushing, grinding, flotation, pressure oxidation, leaching and electrowinning to recover gold from relatively high-grade sulphide feed producing gold doré. The Lihir process plant utilises proven technology that is widely used in the gold industry for this style of mineralisation. The ore processing facility has been operating since it was commissioned in 1996 and upgrades took place during 2011 and 2012. Comminution circuit operating optimisations and minor upgrades are planned to achieve a 15.5Mtpa plant capacity¹².

The metallurgical recovery assumption for ore feed to the autoclave is dependent on the gold and sulphide sulphur grades, and dependent on sulphur to calcium ratio and proportion of aged stockpile feed for flotation material. Overall metallurgical recovery is reconciled with historic production data, laboratory test samples for stockpiled ore and reflects a partial oxidation metallurgical operating strategy. Average life of mine gold recovery is modelled to be 81-82%.

Cut-Off Grade

Lihir open pit employs a grade based cut-off, taking into account gold price, metallurgical recovery assumptions and site operating costs. The site operating costs include transport and refining costs, royalty charges, mining and processing costs, relevant site general and administration costs and relevant sustaining capital costs. These costs equate to a break even cut off value of US\$38/t milled used to define the ultimate pit shell and a marginal cut off value of US\$33/t milled or 1.0 g/t gold used to define ore and waste material within the ultimate pit shell.

The marginal site cost is based on an end of mine life low grade stockpile reclaim strategy, reducing the site activity and long term cost base. The mining cost in the marginal site cost represents the stockpile reclaim cost.

Estimation Methodology

Estimation of the Lihir Ore Reserve involved standard steps of mine optimisation, mine design, production scheduling and financial modelling. Factors and assumptions have been based on operating experience and performance at the Lihir operations. The Ore Reserve has been evaluated through a financial model. All operating and capital costs as well as Ore Reserve revenue factors stated in this document were included in the financial model. A discount factor of 4.5% real was applied. This process demonstrated that the Lihir Ore Reserve has a positive NPV. Sensitivities were conducted on the key input parameters including commodity prices, capital and operating costs, ore grade, discount rate, exchange rate and recovery which confirmed the estimate to be robust.

Material Modifying Factors

The resource estimation process allows for ore dilution and recovery to be built into the resource model based on the assumption of the selective mining unit (SMU) as the block size. The SMU assumption is based on the mining fleet size and is consistent with a high mill throughput/bulk mining strategy. Due to the Localised Uniform Conditioning (LUC) approach adopted in the resource model no additional mining dilution or recovery factors have been applied to the Ore Reserve estimate.

This assumption is supported by the actual reconciliation between resource model and mill performance at Lihir to date being within an acceptable uncertainty range for the style of mineralisation under consideration.

The pit optimisation takes into account Inferred Mineral Resources, however only Measured and Indicated Mineral Resources are reported in the Ore Reserve estimate. The Inferred Mineral Resource represents a small portion of material within the ultimate pit design and both the design and financial model are insensitive to the exclusion of this material.

Civil engineered wall support is required for the Phase 14A cutback to allow access to the orebody. The cutback design also requires mining by a fleet of small equipment owing to the narrow ramp configuration required. Allowances for these activities are included in the preparation of the Ore Reserve estimate.

Other Modifying Factors

Lihir Gold Limited and the Lihir Open Pit are in material compliance with all legal and regulatory requirements. Naturally occurring risks that might have a material impact upon the Lihir ore reserve are discussed in the risks section of Newcrest's Operating and Financial Review (in the Appendix 4E and Financial Report for the year ended 30 June 2021 which is available to view at www.asx.com.au under the code "NCM" and on Newcrest's SEDAR profile) and include the potential impacts of seismic activity.

Environmental permitting for the Phase 14A Project has been assessed and approved by the Conservation and Environment Protection Authority (CEPA).

The known legal, political, environmental or other risks that could materially affect the potential development of the mineral resources or ore reserves are identified in Sections 3 and 4 of Appendix 1.

Appendix 1

JORC Table 1 – Lihir (100% Newcrest)

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	Lihir is located in an active geothermal area and procedures have been developed to ensure that all drilling activities are conducted in a safe manner which is appropriate for when zones of high pressure steam are intersected. Data used for the resource estimation is obtained by two main drilling methods - diamond coring and reverse circulation (RC) drilling. All available diamond drill holes are sampled by cutting the core in half with a diamond saw with sample intervals being either 1m or 2m in length. Half the cut core is placed in a calico bag with a sample number and sent to the laboratory for assaying. All RC drilling was sampled at 1m intervals collected via a cyclone and split with a riffle splitter. The riffle split sample size of 4-5kg is placed in a calico bag with a sample number and sent to the laboratory for assaying.
Drilling techniques	Drilling is the primary source of data for Mineral Resource estimation at Lihir. Data is obtained from two main drilling methods-diamond coring and RC drilling. The majority of drilling for the resource estimation is diamond drill core (93%), comprising PQ (84.8 mm core diameter), HQ (63.5 mm core diameter) and NQ (47.6 mm core diameter). Very little core orientation is performed on site as the structurally complex and geothermal conditions make it very difficult to obtain accurate orientations. Minor (~7%) of resource drilling is RC (5 1/4" diameter) completed prior to 2002 used both vertical and angled holes. Since 2002 all resource drilling has been comprised of diamond core. Stockpile drilling is campaigned using an RC rig with a 4" bit. Hole lengths are routinely 36m.
Drill sample recovery	Core recovery is recorded and stored in an acQuire software database. There are only minor zones of core loss or poor core recovery. Core recovery is generally excellent with average core recoveries around 99%. There is no identified relationship between core loss and grade and the style of mineralisation suggests this is unlikely. There are no records of RC sample recovery.
Logging	All diamond drill holes are geologically logged. Due to the nature of the intense alteration core is qualitatively logged for lithology and alteration and quantitatively logged for structure and geotechnical parameters. All core is logged and photographed after marking up metre intervals and prior to cutting and sampling. Logging data are entered into the acQuire database via a laptop computer or historically via manual data entry.
Sub-sampling techniques and sample preparation	The sampling technique used is considered appropriate for the assessment of Lihir mineralisation. At the completion of drill core logging, the geologist defines which intervals of a drill hole are to be cut for analysis. All recent drilling is analysed on 2m intervals on the metre mark. PQ and HQ sized drill core is sampled by cutting the core in half with a diamond blade saw when intact and competent. The left hand half is placed in a calico bag marked with the appropriate sample number and sent to the assay laboratory for analysis. Where the core is too soft to be cut with a diamond saw, a knife is used to cut the core in the core tray. Where the core is too broken or brittle to be cut by the saw, the fragments are manually sampled. NQ sized core is not cut in half as the entire section is sampled so that sample support is maintained. The standard sampling interval is 2m but has varied over time from 1m to 2m. The remaining half core is stored in the original trays on pallets at the core processing facility. Lihir has a sample preparation facility at the mine and up to January 2015 there are records for crusher duplicates. Drill core was crushed and RC and blast hole samples were dried and loaded into the pulverisers without laboratory splitting. After 2015 there was a reduction in core sampling and all samples were transferred directly to a bank of 6 * LM5 pulverisers without crushing or splitting. There are two standby jaw crushers with a small single deck riffle splitter which are rarely used. Sample preparation for analysis is as follows: Samples are crushed if required to 10mm maximum diameter and split to a nominal weight of 2.5 – 3kg using a riffle splitter. Split samples are dried in an oven at 105°C until dry. Each sample is pulverised using a Labtechnics LM5 pulverizing mill to specified grind parameters of 95% passing 106µm. A 200g sub-sample is collected for analysis and submitted to the assay laboratory. Pulp replicates (not duplicates) are routinely undertaken. Crushed and pulp duplicates are collected at the Orange laboratory. The sample preparation and size is considered appropriate for assessment of bulk tonnage mineral deposits of this type.

Criteria	Commentary
Quality of assay data and laboratory tests	The Lihir onsite laboratory has been the primary laboratory used for assaying, with some more recent assaying completed at the Newcrest Services laboratory (Orange, NSW). Samples are routinely assayed for gold and sulphur. Gold analysis is by fire assay with 25g charge and Atomic Absorption Spectroscopy (AAS) finish and detection limit of 0.01ppm (g/t), which is considered complete. Sulphide sulphur is by Labfit method where the sample is ignited at high temperature in a stream of oxygen. The resulting sulphur dioxide is measured by an infra-red detector using a Carbon/Sulphur analyser. A detailed Quality Assurance/Quality Control (QA/QC) program is in place for on-going assessment of sampling and analytical procedures. The process currently involves analysis of blind submissions of certified reference material (standards) to Lihir laboratory, duplicates from the LM5 pulveriser pulp, assayed during the same batch, blind resubmission of pulps to Lihir laboratory, replicate submissions of pulps to an alternative laboratory for analysis, submission of coarse blank samples (non-Lihir Island barren rock samples), checks on grind and crush size from the sample preparation steps and laboratory inspections and monthly QA/QC meetings. A monthly report is prepared detailing QA/QC performance to support the Mineral Resource estimate. There have been 30 standards used, not all of which were certified for sulphur. The first 16 standards were commercially available standards. Since 2008, there have been 14 standards used, all matrix-matched. Data suggests that during the period between 2007 and 2012 there was a positive bias of between 5 and 20% in sulphide sulphur analysis conducted at Lihir laboratory data acquisition compared to standards reference materials. This suggests the Lihir method during this period reflects a total sulphur assay rather than the sulphide sulphur of the certified reference materials. In 2013 alternative sulphide sulphur techniques were introduced at Lihir which have improved the method accuracy. A further sulphide sulphur methodology improvement was implemented in 2016, with the installation of the Leco Infrared combustion analytical equipment.
Verification of sampling and assaying	All data and interpretative inputs to Mineral Resource estimates are checked and verified in accordance with a range of Newcrest standard operating procedures. Procedures were also in place for all historical drilling programs at Lihir. Diamond drill core samples are processed in-house using a dedicated core processing facility, sample preparation and analytical laboratory. All resource logging data is automatically uploaded to the resource database via logging notebook computers. Newcrest employs a centralised resource drill hole database team to check, verify and validate new data and to ensure the integrity of the total resource database. Day-to-day management of the resource data is undertaken by the database administrator on site using the acQuire database system. Prior to resource estimation a centralised resource team conducts further data checks to ensure data integrity prior to estimation. Regular internal and external reviews of all geological and Mineral Resource estimation processes are conducted to check the quality and integrity of these procedures. No adjustments have been made to assay data.
Location of data points	The grid applied is a local Mine Grid that has it based on AMG Zone 56. The original topography surface is a Light Detection and Ranging (LIDAR) surface created pre-mining. Mining activities are surveyed each month and incorporated into a topographic surface model for depletion purposes. All completed drill hole collars are surveyed by the mine surveyors. A variety of methods have been used to measure down hole deviation (dip and azimuth), including conventional borehole camera, electronic single shot and gyroscopic methods. The majority of the holes have been surveyed using conventional borehole camera methods.
Data spacing and distribution	Historical drilling has been nominally on 35m eastings, but noting the orebody is generally insensitive to drill orientation due to complex mineralisation events. The Mineral Resource has been classified into Indicated and Inferred Mineral Resource after assessing the following factors: drill hole spacing (only areas drilled to 70m x70m drill density have been classified as Indicated Resource), style of mineralisation and geological continuity, data quality and associated QA/QC, grade continuity and proposed mining selectivity and scale of mining. Refer Section 3 Resource Classification for further details. The data spacing and distribution is sufficient to establish geological and grade continuity appropriate for Mineral Resource estimation and classification and supported by historical reconciliation with actual production results. Samples for estimation purposes have been taken, but no physical compositing of samples has occurred during the analysis process.
Orientation of data in relation to geological structure	Gold mineralisation in the Luise Caldera is hosted within volcanics, intrusives, and breccias which have undergone extensive alteration. Two major alteration episodes have been identified which have destroyed much of the original host rock lithologies, and due to this an "ore type" classification has been developed based largely upon various combinations of alteration, hardness, the degree of brecciation and/or leaching of matrix material, and the presence of late stage anhydrite veining. The deposit is generally sub-horizontal. The nature of the mineralisation distribution is such that it is insensitive to drill orientation with a wide variety of orientations having been used. Diamond holes prior to 2002 are predominantly vertical, with angled holes used subsequently to define the Mineral Resource. RC holes completed prior to 2002 used both vertical and angled holes.
Sample security	Samples were transported from drill site to core shed and to site laboratory, all within the operational security zone of the mine. Sample dispatches are reconciled against Laboratory samples received and discrepancies reconciled by geology staff.

Criteria	Commentary
Audits or reviews	An independent review of assaying and QAQC in September 2012 concluded: "The historic assay bias for gold has now been rectified at Lihir, sulphur from sulphide has not been assayed correctly at Lihir laboratory during some stages of the life of operation. Assaying precision for gold is considered consistent with industry standards but lacking for sulphide sulphur. Overall the quality of the Lihir laboratory is now well controlled."

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	Mining and ore processing operations at Lihir are conducted pursuant to a mining development contract with the State of Papua New Guinea and the related special mining lease, and a series of granted mining leases, exploration licenses, leases for mining purposes and mining easements, and associated environmental and other approvals. The granted tenements and permits cover all infrastructure in the immediate vicinity of the mine site, including the open pit, accommodation, plant site, power station, waste-rock and tailings disposal, and bore fields. All infrastructure is in place for the continued operation of Lihir. Current tenements granted under the PNG Mining Act comprise Special Mining Lease (SML) 6, two granted Mining Leases (MLs) and one granted Exploration Licence (EL), plus a number of miscellaneous mining purpose and easement leases. The total area under lease/licence is approximately 250 km². The Mineral Resource lies entirely within SML 6. The registered holder for all tenure is Lihir Gold Limited, a wholly-owned subsidiary of Newcrest Mining Limited since late 2010. SML 6 expires 16 March 2035 and EL485 expired on 31 March 2020. Process for a new renewal from 1 April 2020 to 31 March 2022 was delayed by COVID-19 restrictions and will be lodged for EL485. The two MLs are current to July 2025.
Exploration done by other parties	The first systematic mineral exploration in the area was by the PNG Bureau of Mineral Resources and the Geological Survey of PNG between 1969 and 1974. In their report (which was released in 1982), it detailed the hydrothermal alteration and thermal activity on Lihir Island and suggested that it was a favourable geologic environment for epithermal gold mineralisation. The Ladolam gold deposit was initially discovered in 1982 by joint venture between Kennecott Exploration and Niugini Mining. A feasibility study was completed by Kennecott Mining in March 1992. In the mid 1990's a joint venture was formed between Kennecott Mining and Rio Tinto. Lihir Gold Limited (LGL) was subsequently formed to hold the Mining Development Contract, the Special Mining Lease and associated tenure. Mining operations commenced at Lihir in 1997. In 2005 Rio Tinto sold its interest in LGL, then, in late 2010, Newcrest Mining Limited acquired LGL by scheme of arrangement.
Geology	Exploration has identified several adjacent and partly overlapping mineral deposits in the Luise Caldera, which are collectively called the Ladolam Deposit. The principal component deposits are called Lienetz, Minifie, Coastal and Kapit. Gold mineralisation in the Luise Caldera is contained in a hydrothermally-altered porphyry gold system with the gold hosted in volcanic, intrusive and breccias within the caldera. Two major alteration episodes have been identified which have destroyed much of the original host rock lithologies, and due to this an "ore type" classification has been developed based largely upon various combinations of alteration, hardness, the degree of brecciation and/or leaching of matrix material, and the presence of late stage anhydrite veining. The majority of the gold is contained in sulphides. The limits of the mineralisation have not been completely defined and the deposit remains open at depth, along strike and to the east (currently limited by the Pacific Ocean).
Drill hole Information	No exploration has been reported in this release, therefore there is no drill hole information to report. This section is not relevant to this report on Ore Reserves and Mineral Resources. Comments relating to drill hole information relevant to the Mineral Resource estimate can be found in Section 1 – "Sampling techniques", "Drilling techniques" and "Drill sample recovery".
Data aggregation methods	No exploration has been reported in this release, therefore there are no drill hole intercepts to report. This section is not relevant to this report on Ore Reserves and Mineral Resources. Comments relating to data aggregation methods relevant to the Mineral Resource estimate can be found in Section 1 – "Sampling techniques", "Drilling techniques" and "Drill sample recovery".
Relationship between mineralisation widths and intercept lengths	No exploration has been reported in this release, therefore there are no relationships between mineralisation widths and intercept lengths to report. This section is not relevant to this report on Ore Reserves and Mineral Resources.
Diagrams	No exploration has been reported in this release; therefore no exploration diagrams have been produced. This section is not relevant to this report on Ore Reserves and Mineral Resources.
Balanced reporting	No exploration has been reported in this release, therefore there are no results to report. This section is not relevant to this report on Ore Reserves and Mineral Resources.
Other substantive exploration data	Previously reported drilling results have confirmed the extension of geological and grade continuity beyond the current Mineral Resource seaward constraint.

Criteria	Commentary
Further work	A concept study of mining beyond the current seaward constraint of the Mineral Resource is required to assess the reasonable prospects for eventual economic extraction of identified mineralisation outside the current Mineral Resource seaward constraint.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database integrity	Data is stored in a SQL Server database known as acQuire. Assay and geological data are electronically loaded into acQuire and the database is replicated in Newcrest's centralized database system. Regular reviews of data quality are conducted by site and corporate teams prior to resource estimation, in addition to external reviews.
Site visits	The Competent Person for the Lihir Mineral Resource is part of the operational management team for Lihir Mine.
Geological interpretation	Gold mineralisation in the Luise Caldera is hosted within volcanics, intrusives, and breccias which have undergone extensive alteration. Two major alteration episodes have been identified; an earlier and deeper "porphyry style" event resulting in potassic alteration grading laterally into propylitic alteration, and a later and higher level epithermal event producing argillic, advanced argillic, phyllic, and lower temperature potassic alteration. This intensive alteration has destroyed much of the original host rock lithologies, and due to this an "ore type" classification has been developed based essentially upon various combinations of alteration, hardness, the degree of brecciation and/or leaching of matrix material, and the presence of late stage anhydrite veining. The ore types are roughly sub-horizontal in occurrence and form a fairly consistent vertical sequence of clay-rich rock, grading into white mica-feldspar rock, then feldspar-biotite and, at depth, into feldspar-biotite-anhydrite rock. Within and at the boundaries of the ore types, geological structure is also a major influence on the localization of higher gold grades in the orebodies.
Dimension	The maximum extent of the Mineral Resource is 3km x 1km x 350m. The deposit is generally sub-horizontal with the reporting of the Mineral Resource extent limited by a seaward constraint. An exploration target known as Kapit North East is a seaward extension outside the Mineral Resource.
Estimation and modelling techniques	The Lihir resource estimate contains estimates for gold, arsenic, silver, copper, carbonate, molybdenum and sulphide sulphur. Gold is the primary economic metal with sulphur and carbonate estimates required for autoclave feed management. Estimates of minor elements are required to assist with overall plant performance management. The estimation for each element was undertaken using the non-linear estimation method of Localised Uniform Conditioning (LUC) and is based on an underlying 'diffusion' model, where, in general, grade tends to trend from lower to higher values and vice versa in a relatively continuous way. Raw data was composited to 12m intervals for gold and all other elements. Uniform Conditioning (UC) was used to estimate gold and sulphide sulphur within 100x100x12m panels. The UC model was converted to a LUC model into 20m x 20m x 12m blocks that define the selective mining unit (SMU). Ordinary Kriging (OK) was used for the local estimation of density into the SMU blocks. All other elements (arsenic, silver, copper, carbonate, molybdenum and calcium) were estimated into the SMU. All elements are estimated independently of each other. In 2017 the estimation domains were updated for geologically interpreted fault blocks as well as geometallurgical domains. These were assessed and validated using contact analysis. Nine estimation domains were used for gold (used also for sulphide sulphur, carbonate, silver, arsenic, copper and molybdenum). Top cutting of extreme values for each element was done on a domain basis by examining the histogram of data such that the top 1% samples were cut so that they contained approximately 10% or less of total metal (for example this ranged from 4 to 30 g/t for gold domains). The resource estimate is validated via visual, geostatistical and production reconciliation methods. The December 2017 model is the basis of the Lihir December 2020 Mineral Resource.
Moisture	All tonnages are calculated and reported on a dry tonnes basis.
Cut-off parameters	Lihir open pit employs a grade based cut-off, taking into account metallurgical recovery assumptions, transport costs, refining charges and royalty charges. The site operating costs include mining cost, processing cost, relevant site general and administration costs and relevant sustaining capital costs. These costs equate to a break even cut off value of US\$40/t milled used to define the ultimate pit shell and a marginal cut off value of US\$35/t milled or 1.0 g/t gold used to define ore and waste material within the ultimate pit shell. The marginal site cost is based on an end of mine life low grade stockpile reclaim strategy, reducing the site activity and long term cost base. The mining cost in the marginal site cost represents the stockpile reclaim cost.
Mining factors or assumptions	The Mineral Resource estimate is reported within a constraining notional pit shell. The Lihir deposit is extracted via a large Open Cut. Consequently, some aspects of the model construction reflect the proposed bulk mining method of open pit mining on 12 m benches with a 20m x 20m selective mining unit.

Criteria	Commentary
Metallurgical factors or assumptions	Gold extraction is by pressure oxidation of ore from a combination of direct feed and flotation feed sources depending on sulphur levels. The target sulphur content in slurry to the autoclave is in the range 5-10% to ensure auto-thermal operation of the autoclave. Ore blending and flotation plant operation is undertaken in a manner to maintain feed sulphur content in this range. Metallurgical test work and operating experience at site has shown that there are four main rock /alteration domain groups identified as: Argillic Clay, Advanced Argillic, Epithermal and Porphyry. Gold recoveries recognise float recovery differences between in-situ and stockpile material, and overall neutralisation cyanidation adsorption (NCA) recovery formulae reflect oxidation intensity.
Environmental factors or assumptions	Lihir operations comprise an open pit mine, ore processing plant, and associated supporting infrastructure. Higher-grade ore is processed via pressure oxidation and carbon-in-leach cyanidation methods, with lower grade ore stockpiled for later processing. Lihir uses deep sea tailings placement (DSTP). In view of the heavy rainfall typically experienced on Niolam Island, the lack of suitable area for a tailings storage facility and the high seismicity of the region, DSTP was the preferred tailings placement method for Lihir. The plant tailings are premixed with sea water within the confines of the mining lease before being placed offshore. Baseline studies were undertaken prior to the approval by PNG environmental authorities and commencement of the DSTP. Regular monitoring is undertaken to verify the operational performance of the system and is subject to the regulatory criteria established by the PNG CEPA. Waste rock from the mine is either used for construction purposes or transported in barges for off-shore submarine disposal. Submarine disposal is carefully planned and controlled to achieve a continuous rill slope along the steeply dipping sea floor and to prevent uncontrolled slumping triggering a rise in water levels. The Mineral Resource assumes the continued use of these waste management processes.
Bulk Density	All bulk density measurements are carried out in accordance with site standard procedures for Specific Gravity. The physical determination of bulk density is undertaken on solid pieces of core, 10cm in length. Intervals for bulk density determination are selected according to lithology or alteration / mineralisation type (to best represent certain intervals as defined by the geologist). The measurements are performed on site (as part of the logging process), by geological assistants. Measurements are generally taken at 50m intervals down hole, or more frequently if required. This is a dry air method of analysis. Ordinary Kriging (OK) was used for the local estimation of density into the nine geometallurgical domains.
Classification	The in-situ Mineral Resource has been classified into Indicated and Inferred based on grade continuity assessments using the criteria of slope of regression (SOR) and the variogram weighted distance (WTD). For Indicated classification a guideline of SOR > 0.7 and WTD <75 meters was applied. For Inferred classification a guideline of SOR > 0.65 and WTD <160 meters was applied. Stockpiles were classified as Measured and Indicated Mineral Resources based on the stockpile build methodology. In-situ resource classification methodology has been tested with geostatistical evaluations and historical reconciliations, and appropriately confirms the Competent Persons view of the deposit.
Audits or reviews	The current Mineral Resource estimate has been externally reviewed by SRK in December 2017 and there were no issues or concerns with the Mineral Resource inputs, process and execution. SRK concluded that the Mineral Resource estimate was suitable for reporting in accordance with the requirements of the JORC Code (2012).
Discussion of relative accuracy/ confidence	For an Indicated Resource it is considered reasonable for the relative uncertainty to be +/- 15% in tonnage, grade and metal (exclusive of each other, i.e., each variable has to satisfy the criteria) for an annual production volume at a 90% confidence level. Geostatistical evaluations indicate that based on the annual processing throughputs from the pits this criteria is satisfied globally within the deposit. Relative uncertainties and confidence level estimates are only considered for gold as it is the primary economic contributor. Detailed monthly mine reconciliations have been maintained since production commenced. The mine reconciliations since 2012 confirm that the in-situ tonnage, grade and metal variances are well within the Indicated Resource relative uncertainty band, globally.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	Commentary
Mineral Resource Estimate for conversion to Ore Reserves	A technical description of the Mineral Resource estimate that provided the basis for the December 2020 Lihir Ore Reserve estimate is presented in the preceding sections to this table. The Ladolam gold deposit is located within the Louise Caldera, on the eastern side of Lihir Island, New Ireland Province, Papua New Guinea. Gold mineralisation in the Louise Caldera is hosted within volcanics, intrusives, and breccias that have undergone extensive alteration. The ore body is contained in a hydrothermally-altered porphyry gold system with the gold hosted in volcanic, intrusive and breccias within the caldera. The majority of the gold is contained in sulphides. The Measured and Indicated Mineral Resources reported in the Mineral Resource report are inclusive of those Mineral Resources modified to produce the Ore Reserves Estimate herein.

Criteria	Commentary																			
Site Visits	The Competent Person for the Ore Reserve estimate is an employee of Newcrest Mining Limited and at the time of Phase 14A Ore Reserve preparation was the Senior Specialist - Long Term Planning. The CP was based on site from 2015 to 2020 providing long term and strategic planning support for operations and technical studies. This experience has been used to validate technical and operating assumptions used in the preparation of this Ore Reserve estimate.																			
Study Status	Production at Lihir commenced in 1996 and it is now a mature and stable operation with well-established mining and processing performance.																			
Cut-off Parameters	Lihir open pit employs a grade based cut-off, taking into account gold price, metallurgical recovery assumptions and site operating costs. The site operating costs include transport and refining costs, royalty charges, mining and processing costs, relevant site general and administration costs and relevant sustaining capital costs. These costs equate to a break even cut off value of US\$38/t milled used to define the ultimate pit shell and a marginal cut off value of US\$33/t milled or 1.0 g/t gold used to define ore and waste material within the ultimate pit shell. The marginal site cost is based on an end of mine life low grade stockpile reclaim strategy, reducing the site activity and long term cost base. The mining cost in the marginal site cost represents the stockpile reclaim cost.																			
Mining factors or assumptions	Estimation of the Lihir Ore Reserve involved standard steps of pit optimisation, mine design, production scheduling and financial modelling. Factors and assumptions have been determined as part of a prefeasibility level study completed in 2020, or are based on operating experience and performance. Current mining activity at Lihir is via conventional truck and shovel operation, with offshore barge disposal of waste rock and land based and in-pit stockpiling and reclaim of lower grade ore. The current mining activities demonstrate the appropriateness of this mining method as the basis of the Ore Reserve estimate. Phase 14A design parameters are tabled below: <table><tr><th>Parameter</th><th>Specification</th><th>Value</th></tr><tr><td rowspan="2">Bench height</td><td>Pre-strip zone</td><td>12 m</td></tr><tr><td>Ore zone</td><td>12 m</td></tr><tr><td rowspan="2">Road width</td><td>Dual lane haul road</td><td>28 m</td></tr><tr><td>Single lane haul road</td><td>18 m</td></tr><tr><td>Maximum road grade</td><td>Main haul road</td><td>10% (1 in 10)</td></tr><tr><td>Minimum Mining Width</td><td>One shovel on bench</td><td>40 m</td></tr></table> Geotechnical slope parameters are based on the detailed analysis of ground conditions and other factors which influence geotechnical performance within the Phase 14A cutback. The Phase 14A slope design parameters are also based on the assumption that a comprehensive system of soil nails, cable anchors, mesh, shotcreting and depressurisation is used to provide additional support to the final wall configuration during cutback development, and that a backfill buttress is used to provide long term support after cutback completion. The design parameters are based on current geotechnical experience and a prefeasibility level study for the cutback mining area. The Lihir Resource Model utilises LUC to estimate block gold content. This process allows for ore dilution and recovery to be built into the resource model based on the assumption of the selective mining unit (SMU) as the block size. The SMU assumption (20m x 20m x 12m) is based on the mining fleet size and is consistent with a high mill throughput/bulk mining strategy. Due to the LUC approach adopted in the resource model no additional mining dilution or recovery factors have been applied to the Ore Reserve estimate. This assumption is supported by the actual reconciliation between resource model and mill performance at Lihir project to date being within an acceptable uncertainty range for the style of mineralisation under consideration. The pit optimisation takes into account Inferred Mineral Resource, however only Measured and Indicated Resource is reported in the Ore Reserve estimate. The Inferred Resource represents a small portion of material within the ultimate pit design and both the design and financial model are insensitive to the exclusion of this material. The selected mining method requires civil engineered wall support as described above to allow access to the Phase 14A orebody. The cutback design also requires mining by a fleet of small equipment owing to the narrow ramp configuration required. Allowances for these activities are included in the preparation of the Ore Reserve estimate. A backfill buttress required for long term support of the final cutback wall prevents mining of some existing Reserves inventory.	Parameter	Specification	Value	Bench height	Pre-strip zone	12 m	Ore zone	12 m	Road width	Dual lane haul road	28 m	Single lane haul road	18 m	Maximum road grade	Main haul road	10% (1 in 10)	Minimum Mining Width	One shovel on bench	40 m
Parameter	Specification	Value																		
Bench height	Pre-strip zone	12 m																		
	Ore zone	12 m																		
Road width	Dual lane haul road	28 m																		
	Single lane haul road	18 m																		
Maximum road grade	Main haul road	10% (1 in 10)																		
Minimum Mining Width	One shovel on bench	40 m																		
Metallurgical factors or assumptions	The Ore Reserve estimate is based on a maximum 15.5Mtpa comminution rate plant producing gold doré. Ore processing at Lihir involves the main operations of crushing, grinding, flotation, pressure oxidation, leaching and electrowinning to recover gold from relatively high-grade sulphide feed. The Lihir process plant utilises proven technology that is widely used in the gold industry for this style of mineralisation. The ore processing facility has been operating since it was commissioned in 1996 and upgrades took place during 2011/2012. Comminution circuit operating optimisations and minor upgrades are planned to achieve a 15.5Mtpa plant capacity.																			

Criteria	Commentary
	The metallurgical recovery assumption for ore feed to the autoclave is dependent on the gold and sulphide sulphur grades, and dependent on sulphur to calcium ratio and proportion of aged stockpile feed for flotation material. Overall metallurgical recovery is reconciled with historic production data, laboratory test samples for stockpiled ore and reflects a partial oxidation metallurgical operating strategy. Average life of mine gold recovery is modelled to be 81-82%. The potential impact of the presence of low concentrations of copper on leaching efficiency and cyanide consumption has been assessed and is not considered an issue for the Ore Reserve estimate. Copper levels are generally below 500ppm, and historical performance indicates that levels below 1000ppm show no material impact.
Environmental	Lihir open pit is an operating mine and has been granted an environmental permit for the mining of the Phase 14A cutback.
Infrastructure	The Lihir operation is an operating mine and has the necessary infrastructure in place for its continued operation.
Costs	Capital and operating costs have been determined as part of the prefeasibility study based on estimated operating costs for a drilling, shotcreting and cable bolt installation program. Reserve cost estimates are considered to be pre-feasibility level. Provision has also been made for capital expenditure required for a fleet of smaller mining equipment suited to the cutback access configuration. Life of cutback non-sustaining capital is estimated in the range of US\$60-70 million. No cost impact is expected from deleterious elements. It has therefore not been necessary to include additional costs relating to minor elements when preparing the Ore Reserve estimate. Transport and refining charges have been developed from first principles consistent with the application and input assumptions for these costs used by the current operation. Refining charges and transport costs are estimated to average US\$2.24/oz of gold. A royalty of 2.0% of gold revenue (net of refining and transport costs) is divided between federal, provincial governments and local level governments and landowners. A mining levy of 0.5% (net of refining and transport costs) is also applied in the preparation of this reserve estimate.
Revenue factors	Long term metal prices and exchange rate assumptions adopted in the December 2020 Reserve estimation process are US\$1,300/oz for gold at a AUD:USD exchange rate of 0.75. These assumptions are consistent with Newcrest metal price guideline for December 2020 Ore Reserve period.
Market assessment	Newcrest is a price taker and gold is sold on the open market and subject to price fluctuations. Supply and demand for gold from Lihir is not a constraint in the estimation of the Ore Reserve.
Economic	The Ore Reserve has been evaluated through a financial model. All operating and capital costs as well as revenue factors stated in this document were included in the financial model. This process demonstrated the Lihir Ore Reserve to have a positive NPV. Sensitivities have been conducted on the key input parameters of costs and recovery which confirm the estimate to be robust. The NPV range has not been provided as Newcrest considers this to be commercially sensitive information.
Social	Engagement with landowners for affected blocks within the cutback footprint and the local community was undertaken through a series of meetings in conjunction with the Mineral Resources Authority (MRA). Approval for the project has been endorsed by block executives as documented in the engagement meeting minutes. Environmental permitting for the Phase 14A Project has been assessed and approved by CEPA.
Other	Lihir Gold Limited and the Lihir Open Pit are in material compliance with all legal and regulatory requirements. Naturally occurring risks that might have a material impact upon the Lihir ore reserve are discussed in the risks section of Newcrest's Operating and Financial Review (in the Appendix 4E and Financial Report for the year ended 30 June 2021 which is available to view at www.asx.com.au under the code "NCM" and on Newcrest's SEDAR profile) and include the potential impacts of seismic activity.
Classification	All of the in-situ Ore Reserve is currently derived from Indicated Resources. This classification is based on the density of drilling, the ore body experience and the mining method employed. The only Proved Ore Reserves derived from Measured Resources are those reported in known and quantified stockpiles. It is the Competent Person's view that the classifications used for the Ore Reserves are appropriate.
Audits or reviews	Golder Associates Pty Ltd (Golder) was commissioned in 2020 to conduct an independent review of the Ore Reserve estimation processes and results that did not include Phase 14A. Golder concluded that the Ore Reserve had been prepared using accepted industry practice and is considered suitable and reported in accordance with the JORC Code, 2012 Edition. A competent independent review of the Phase 14A Ore Reserve estimate has been undertaken by Newcrest group planning with no non-compliances or material issues.
Discussion of relative accuracy/confidence	The accuracy of the estimates within this Ore Reserve is mostly determined by the order of accuracy associated with the geotechnical slope parameters, the Mineral Resource model and the cost factors used. The Competent Person views the Lihir Ore Reserve a reasonable assessment of the global estimate.

Forward Looking Statements

This document includes forward looking statements and forward looking information within the meaning of securities laws of applicable jurisdictions. Forward looking statements can generally be identified by the use of words such as “may”, “will”, “expect”, “intend”, “plan”, “estimate”, “anticipate”, “believe”, “continue”, “objectives”, “targets”, “outlook” and “guidance”, or other similar words and may include, without limitation, statements regarding estimated reserves and resources, certain plans, strategies, aspirations and objectives of management, anticipated production, study or construction dates, expected costs, cash flow or production outputs and anticipated productive lives of projects and mines. Newcrest continues to distinguish between outlook and guidance. Guidance statements relate to the current financial year. Outlook statements relate to years subsequent to the current financial year.

These forward looking statements involve known and unknown risks, uncertainties and other factors that may cause Newcrest’s actual results, performance and achievements or industry results to differ materially from any future results, performance or achievements, or industry results, expressed or implied by these forward-looking statements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which Newcrest operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation. For further information as to the risks which may impact on Newcrest’s results and performance, please see the risk factors included in the Operating and Financial Review in the Appendix 4E and Financial Report for the year ended 30 June 2021 which is available to view at www.asx.com.au under the code “NCM” and on Newcrest’s SEDAR profile.

Forward looking statements are based on Newcrest’s good faith assumptions as to the financial, market, regulatory and other relevant environments that will exist and affect Newcrest’s business and operations in the future. Newcrest does not give any assurance that the assumptions will prove to be correct. There may be other factors that could cause actual results or events not to be as anticipated, and many events are beyond the reasonable control of Newcrest. Readers are cautioned not to place undue reliance on forward looking statements, particularly in the current economic climate with the significant volatility, uncertainty and disruption caused by the COVID-19 pandemic. Forward looking statements in this document speak only at the date of issue. Except as required by applicable laws or regulations, Newcrest does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in assumptions on which any such statement is based.

Non-IFRS Information

Newcrest’s results are reported under International Financial Reporting Standards (IFRS). This document includes non-IFRS financial information within the meaning of ASIC Regulatory Guide 230: ‘Disclosing non-IFRS financial information’ published by ASIC and within the meaning of Canadian Securities Administrators Staff Notice 52-306 – Non-GAAP Financial Measures. Such information includes: ‘Free Cash Flow’ (calculated as cash flow from operating activities less cash flow related to investing activities and ‘AISC’ (All-In Sustaining Cost) as per updated World Gold Council Guidance Note on Non-GAAP Metrics released November 2018. AISC will vary from period to period as a result of various factors including production performance, timing of sales and the level of sustaining capital and the relative contribution of each asset. These measures are used internally by Newcrest management to assess the performance of the business and make decisions on the allocation of resources and are included in this document to provide greater understanding of the underlying performance of Newcrest’s operations. The non-IFRS information has not been subject to audit or review by Newcrest’s external auditor and should be used in addition to IFRS information. Such non-IFRS financial information/non-GAAP financial measures do not have a standardised meaning prescribed by IFRS and may be calculated differently by other companies. Although Newcrest believes these non-IFRS/non-GAAP financial measures provide useful information to investors in measuring the financial performance and condition of its business, investors are cautioned not to place undue reliance on any non-IFRS financial information/non-GAAP financial measures included in this document. When reviewing business performance, this non-IFRS information should be used in addition to, and not as a replacement of, measures prepared in accordance with IFRS, available on Newcrest’s website, the ASX platform and SEDAR.

Ore Reserves and Mineral Resources Reporting Requirements

As an Australian Company with securities listed on the Australian Securities Exchange (ASX), Newcrest is subject to Australian disclosure requirements and standards, including the requirements of the Corporations Act 2001 and the ASX. Investors should note that it is a requirement of the ASX listing rules that the reporting of ore reserves and mineral resources in Australia is in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code) and that Newcrest’s ore reserve and mineral resource estimates comply with the JORC Code.

Newcrest is also subject to certain Canadian disclosure requirements and standards, as a result of its secondary listing on the Toronto Stock Exchange (TSX), including the requirements of National Instrument 43-101 (NI 43-101). Investors should note that it is a requirement of Canadian securities law that the reporting of Mineral Reserves and Mineral Resources in Canada and the disclosure of scientific and technical information concerning a mineral project on a property material to Newcrest comply with NI 43-101. Newcrest’s material properties are currently Cadia, Lihir, Red Chris and Wafi-Golpu. Copies of the NI 43-101 Reports for Cadia, Lihir and Wafi-Golpu, which were released on 14 October 2020, are available at www.newcrest.com and on Newcrest’s SEDAR profile. The Red Chris NI 43-101 report is expected to be submitted within 45 days of the date of this market release.

Competent Person's Statement

The information in this document that relates to Lihir Ore Reserves is based on and fairly represents information compiled by Mr David Grigg. Mr David Grigg is the Senior Specialist Long Term Planning and a full-time employee of Newcrest Mining Limited. He is a shareholder in Newcrest Mining Limited and is entitled to participate in Newcrest's executive equity long term incentive plan, details of which are included in Newcrest's 2021 Remuneration Report. He is a Member of the Australasian Institute of Mining and Metallurgy. Mr David Grigg has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code. Mr David Grigg consents to the inclusion of material of the matters based on his information in the form and context in which it appears.

The information in this document that relates to Lihir Mineral Resources is based on and fairly represents information compiled by Mr Benjamin Likia. Mr Likia is the Manager - Mining and a full-time employee of Newcrest Mining Limited. He is entitled to participate in Newcrest's executive equity long term incentive plan, details of which are included in Newcrest's 2021 Remuneration Report. He is a Member of the Australian Institute of Mining and Metallurgy. Mr Likia has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code. Mr Likia consents to the inclusion of material of the matters based on his information in the form and context in which it appears.

Technical and Scientific Information

The technical and scientific information contained in this document relating to Lihir (including the Mineral Resource and Ore Reserve) was reviewed and approved by Craig Jones, Newcrest's Chief Operating Officer Papua New Guinea, FAusIMM and a Qualified Person as defined in NI 43-101.

Authorised by a Newcrest Board Committee

For further information please contact

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