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ASX Release

30 July 2024

Simberi Ore Reserves Increase 40% to 2.8 Moz

Mineral Resource and Ore Reserve Statement as at 30 June 2024

Highlights

- **Simberi Mineral Resources up 0.3 Moz (5%) to 5.0 Moz (net of depletion)**
  - **1.9 Moz upgraded from Inferred to Measured and Indicated through FY24 Resource development drilling campaign and additional modelling work**
- **Simberi Ore Reserves increased by 0.8 Moz (40%) to 2.8 Moz (net of depletion)**
- **Simberi Ore Reserves are estimated at 47.3 Mt @ 1.8 g/t Au for 2.8 Moz of contained gold**
- **Simberi Mineral Resources[1] are estimated at 113.6. Mt @ 1.4 g/t Au for 5.0 Moz of contained gold**

Following the FY24 Resource definition and exploration drilling program, St Barbara Limited ("**St Barbara**" or the "**Company**") (ASX:SBM) is pleased to announce the revised Mineral Resources and Ore Reserves at its Simberi Operations in Papua New Guinea as at 30 June 2024[2].

The drilling program and revised geological model has resulted in a higher than forecast conversion of Inferred Mineral Resources to Measured and Indicated of 1.9 Moz.

St Barbara Managing Director and CEO Andrew Strelein said*: "We are delighted with the upgrading of 1.9 Moz of Mineral Resources from Inferred to Measured and Indicated, compared to our revised target of 1.5 Moz."*

"Proved and Probable Ore Reserves have been increased by 40%, to 2.8 Moz, on the back of our increased confidence in the underlying Mineral Resource. This upgrade ensures that our recently announced 10 Year Plus Mine Plan Outlook is completely underpinned now by Proved and Probable Ore Reserves. With very little Inferred Mineral Resources left to convert, the focus of FY25's 9000 m diamond drilling program shifts to expanding the Mineral Resource. Specifically, we will follow-up last year's discovery of the Sorowar – Pigiput trend and test the sulphide potential of the Samat deposit, and explore / sterilise various areas including at Pigibo North."

[1] Mineral Resources are reported inclusive of Ore Reserves

[2] Atlantic's Mineral Resources and Ore Reserves remain as per the report titled '*Mineral Resource and Ore Reserve Statement as at 31 December 2023*' released to the ASX on 13 February 2024

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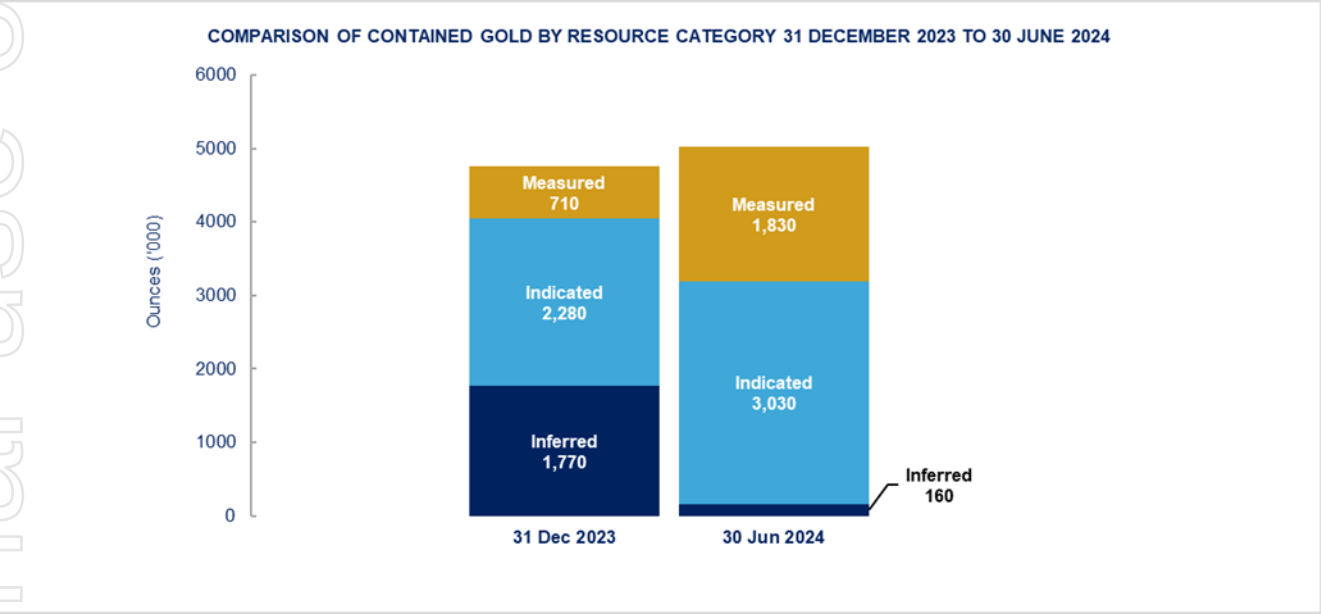
St Barbara attaches the Simberi Mineral Resource and Ore Reserve position at 30 June 2024 confirming the following totals:

- Simberi Ore Reserves are estimated at 47.3 Mt @ 1.8 g/t Au for 2.8 Moz of contained gold
- Simberi Mineral Resources[1] are estimated at 113.6. Mt @ 1.4 g/t Au for 5.0 Moz of contained gold

The chart below highlights the significance of the Simberi Mineral Resource upgrade from Inferred to Measured and Indicated compared to the most recent Mineral Resource statement of 31 December 2023.



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[1] Mineral Resources are reported inclusive of Ore Reserves

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Overview

Simberi's Mineral Resources and Ore Reserves position at 30 June 2024 is summarised and compared with the 31 December 2023 statement in Tables 1 and 2.

Table 1: St Barbara June 30 2024 and December 31 2023 Mineral Resources Comparison

Resource	December 31, 2023 Mineral Resources			June 30, 2024 Mineral Resources		
	Tonnes (Mt)	Grade (g/t)	Gold (koz)	Tonnes (Mt)	Grade (g/t)	Gold (koz)
Oxide	23.3	1.1	790	34.7	1.1	1,220
Sulphide	75.1	1.6	3,970	77.3	1.5	3,740
Stockpile	-	-	-	1.5	1.2	60
Total	**98.3**	**1.5**	**4,760**	**113.6**	**1.4**	**5,020**

Table 2: St Barbara December 30 2024 and December 31 2023 Ore Reserves Comparison

Resource	December 31, 2023 Ore Reserves			June 30, 2024 Ore Reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (koz)	Tonnes (Mt)	Grade (g/t)	Gold (koz)
Oxide	7.8	1.2	300	18.8	1.2	750
Sulphide	23.8	2.2	1,640	27.1	2.2	1,950
Stockpile	0.9	1.2	40	1.5	1.2	60
Total	**32.5**	**1.9**	**1,980**	**47.3**	**1.8**	**2,760**

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Simberi Mineral Resources Revisions

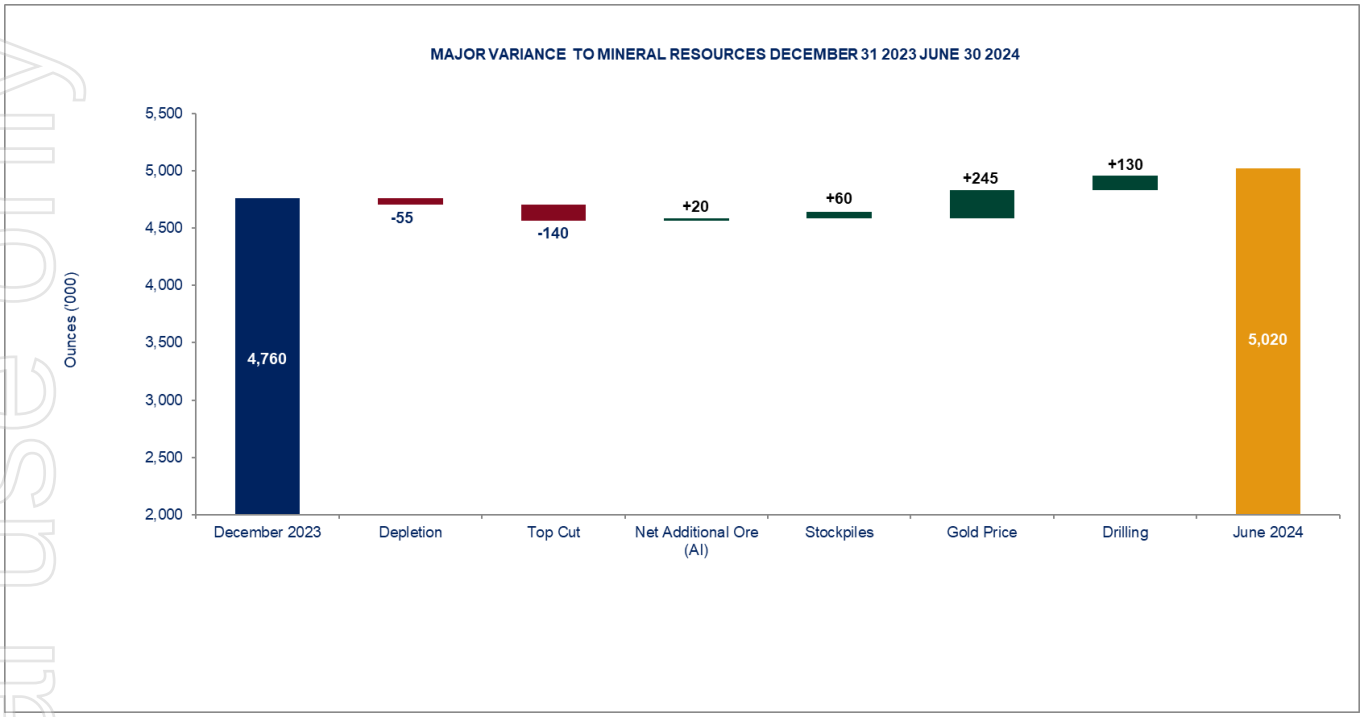

Figure 1: Reconciliation of Simberi Mineral Resources 31 December 2023 to 30 June 2024

Mineral Resources have increased by 260koz globally for Simberi. Variances between the December 2023 and June 2024 estimates are due to:

- Mining depletion (-55koz)
- Change in top cut strategy (-140koz)
- Net additional oxide ore (+20koz)
- Stockpiles (+60koz)
- Increase in gold price from US$1,875 to US$2,000(+245koz)
- Munun Creek Resource Definition and Exploration drilling (+130koz)

Total Measured and Indicated Resources have increased by approximately 1.9 Moz due to the reclassification of Inferred Resources. This is a consequence of FY24 drilling and improved geological models.

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Simberi Ore Reserves Revisions

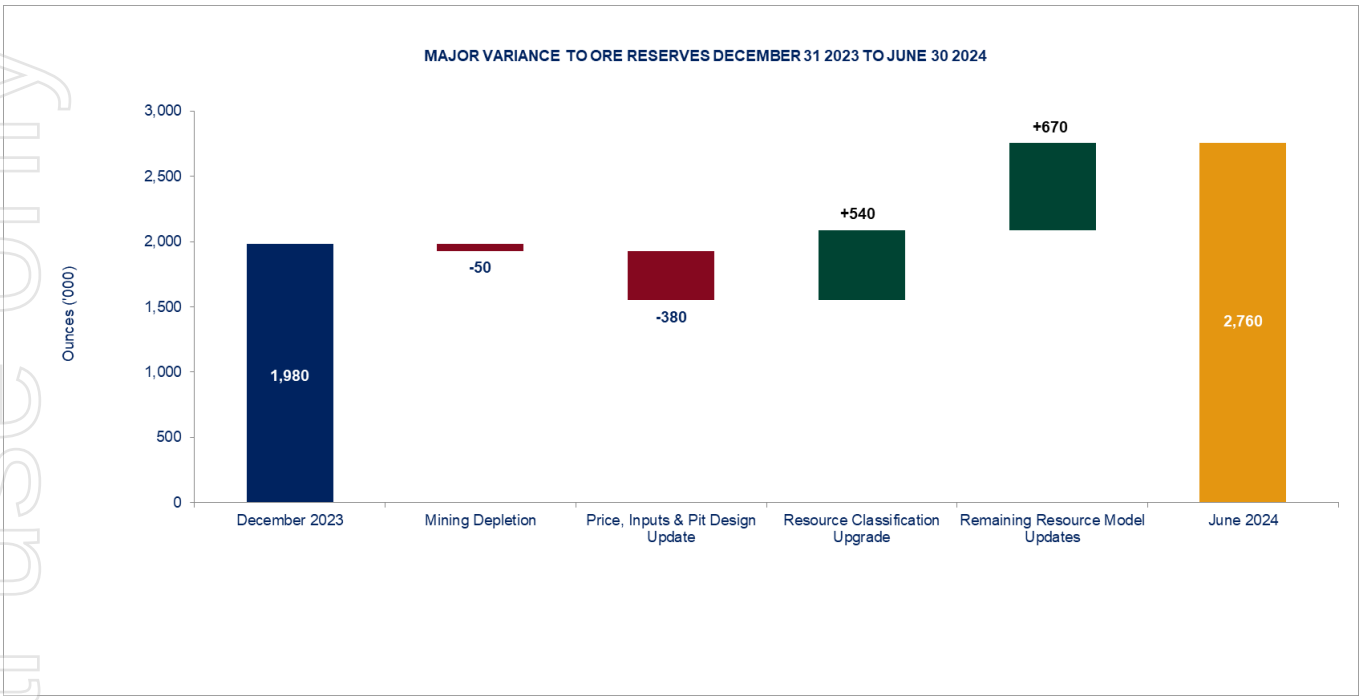

Figure 2: Reconciliation of Simberi Ore Reserves 31 December 2023 to 30 June 2024

Ore Reserves have increased by 780koz globally for Simberi. Variances between the December 2023 and June 2024 estimates are due to:

- Mining depletion (-50koz)
- Changes pricing inputs, gold price and pit designs (-380koz). Whilst the Sulphide Ore Reserve price was increased from US$1,500/oz to US$1,700/oz there were increases in operating costs associated with recent work done on revising and updating FEED study costs as part of the options study work completed earlier this year. Overall the increases in costs offset the impact of the gold price change.
- Resource model classification changes (+540koz). This increase is attributed to material that was previously classified as inferred that has increased in confidence to indicated or measured.
- Remaining Resource model updates (+670kz). This increase is attributed to additional Ore Reserves that have been added from new indicated or measured material added to the Resource model, such as additions from new drilling and the impact of the Stratum AI work using multi-element data to classify material as CIL or flotation feed.

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Mineral Resources 30 June 2024

Region	Project	Measured			Indicated			Inferred			Total		
		Tonnes (Mt)	Grade (g/t)	Ounces ('000)	Tonnes (Mt)	Grade (g/t)	Ounces ('000)	Tonnes (Mt)	Grade (g/t)	Ounces ('000)	Tonnes (Mt)	Grade (g/t)	Ounces ('000)
PNG	Simberi Oxide	19.3	1.1	680	12.9	1.1	450	2.6	1.1	90	34.7	1.1	1,220
	Simberi Sulphide	23.0	1.5	1,090	52.9	1.5	2,580	1.5	1.5	70	77.3	1.5	3,740
	Simberi Stockpile	1.5	1.2	60							1.5	1.2	60
	Total Simberi	**43.8**	**1.3**	**1,830**	**65.7**	**1.4**	**3,030**	**4.1**	**1.2**	**160**	**113.6**	**1.4**	**5,020**

Notes

1. Mineral Resources are reported inclusive of Ore Reserves.
2. Cut-off Grades Simberi Oxide (0.4 g/t Au), Simberi Sulphide (0.6 g/t Au).
3. Simberi Mineral Resources are reported constrained by a US$2,000/oz pit shell.
4. Rounding may result in apparent summation differences between tonnes, grade and contained metal.

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Simberi Ore Reserves 30 June 2024

Region	Project	Proved			Probable			Total		
		Tonnes (Mt)	Gold (g/t)	Ounces ('000)	Tonnes (Mt)	Gold (g/t)	Ounces ('000)	Tonnes (Mt)	Gold (g/t)	Ounces ('000)
PNG	Simberi Oxide	11.7	1.3	480	7.1	1.2	270	18.8	1.2	750
	Simberi Sulphide	9.9	2.2	690	17.2	2.3	1,260	27.1	2.2	1,950
	Simberi Stockpile	1.5	1.2	60				1.5	1.2	60
	Total Simberi	**23.0**	**1.7**	**1,220**	**24.3**	**2.0**	**1,540**	**47.3**	**1.8**	**2,760**

Notes

1. Metal price: FY25-27: $1,800/oz Au, +FY28: $1,700/oz Au.
2. Cut-off to define ore based on a $0/t net revenue, including gold revenue.
3. Mine plan assumes oxide processing FY25-27, sulphide processing from FY28, and remnant oxide processing on sulphide depletion.
4. Metal recovery based on formulae for oxide (average 73%) and sulphide (average 82%).
5. Mineral Resources are reported inclusive of Ore Reserves.
6. Rounding may result in apparent summation differences between tonnes, grade and contained metal.

JORC Code Compliance Statements

The information in this report that relates to Ore Reserves at Simberi Operations is based on information reviewed and compiled by Mr. Glen Williamson who is a Chartered Professional (Mining) and Fellow of the Australasian Institute of Mining and Metallurgy. Glen Williamson is a full-time employee of AMC Consultants Pty Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Glen Williamson consents to the inclusion in the statement of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources at Simberi and Atlantic Operations is based on information compiled by Ms. Jane Bateman who is a Fellow of the Australasian Institute of Mining and Metallurgy. Jane Bateman is a full-time employee of St Barbara Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Jane Bateman consents to the inclusion in the statement of the matters based on her information in the form and context in which it appears.

Simberi Mineral Resource Estimate Summary

Geology and Geological Interpretation

Simberi Island represents an eroded, deeply dissected Pliocene strato-volcano. The island developed from multiple episodes of eruptive and effusive mafic to intermediate volcanism. Volcanic flows and intrusives range from basanite, alkali basalt, trachybasalt, trachyandesite, microsyenite, trachyte and feldspar porphyry. In places these units are overlain by a fining-up sequence of coarse grits, sandstone and mudstone. Bioclastic limestone platforms unconformably overlay the volcano-sedimentary sequence. A number of raised Pliocene to Pleistocene bioclastic limestone platforms flank the volcano and provide evidence of ongoing regional uplift.

Gold mineralisation at Simberi is associated with extension and basin formation (caldera collapse) after the cessation of volcanic activity. Mineralised normal faults are seen in all deposits, and an abundance of steep structures, steep fault lineations and normal fault offsets at Simberi are consistent with extensional tectonics.

The deposits comprise oxides and sulphides, reflecting the depth of weathering and degree of erosion. Significant oxides are predominantly present in the areas of highest topography, >150m RL. Oxides may persist to lower elevations on the larger faults, but in general, are absent in the lower ground. At Sorowar and Pigiput, the supergene oxides are well developed in the strongly argillic-altered breccia units, but the overlying agglomerate/tuffaceous sandstone is only weakly weathered. These upper units are only locally affected by the argillic-alteration, indicating deposition at a late stage in the extensional/mineralisation event. Weathering/supergene alteration is best developed in the strongly altered units.

Leapfrog software was used to generate a 0.25 g/t Au grade shell for resource estimation.

Drilling Techniques

Drilling has used primarily RC (3.75" to 4") and diamond drilling, primarily PQ to approximately 200 to 250m down hole and thereafter HQ and NQ.

Sampling and sub-sampling techniques

The current sampling practices at Simberi are:

Diamond core is photographed before being sampled. Diamond drilling is sampled from PQ3 (85mm), HQ3 (61.1mm) and NQ3 (45mm) sized core using standard triple tubes. Half or quarter core is sampled on nominal 1 or 2 metre intervals with the lower or left-hand side of the core collected for sample preparation. For PQ diameter core a further cut is completed, whereby quarter core is submitted to provide a practical sample size. Diamond core sampling is carried out irrespective of geology, alteration or any other geological feature on the nearest metre at one and two metre intervals. Two metre intervals are used in zones of poor recovery to allow for adequate sample. All samples are cut using an Almonte automated core saw.

RC drilling is sampled at one metre intervals generated via the rigs cyclone splitter system by collection in calico bags. Regular inspections of the cyclone ensure it is level and free of loose material and blockages. The cyclone is cleaned at the addition of a new drill rod (every 6m). The drillhole spoil weighs approximately 20 kg and 2 kg samples are collected however sample recovery is not reported. When samples are wet, they are collected in a 20-litre bucket, the water decanted, and the sample transferred to calico bags. The one metre samples are then submitted for assay.

Sample Analysis Method

Current sample preparation and analytical processes are:

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1. Oven drying in oven at >105° C with the fan on. After 8 hours the samples are checked to see if no dust adheres to a clean shiny tool e.g. a spatula, and a little dust is seen to rise when the material is agitated;

2. Samples >1 kg are crushed to <2 mm with a jaw crusher and then riffle split to achieve an 800 to 1200 gm split. If the samples are < 1kg, the samples are sent directly to the pulveriser;

3. Pulverise (Essa LM2 Pulveriser) for 5 minute and check coarseness with fingers. If gritty, pulverise for 1-2 minutes or until a suitable fine pulp is reached. In 2021, a test of grind quality was implemented to ensure 90% passing 75 microns; and

4. Transfer directly from pulverising bowl to pulp packet.

The sample is initially assayed for gold on site by Aqua Regia digest followed by an AAS instrument read. This process has a lower detection limit of 0.02 ppm Au. Pulps are subsequently sent to ALS in Townsville. The pulps weigh approximately 300g and are analysed using methods ME-ICP41 and Fire Assay Fusion (FA-FUS03 & FA-FUS04). The gold detection limit is 0.01ppm.

Estimation Methodology

Ordinary Kriging with 2m composites was used to estimate Au.

Mineral Resource Classification

Model classification uses wireframes based on drill hole spacing. The following criteria are used to determine the limits of the wireframes:

- Measured up to approximately 20m spaced drilling
- Indicated up to approximately 60m
- Inferred > 60m

Cut-off Grades

The resource is reported at a gold cut-off of 0.4 g/t for oxide and 0.6 g/t for sulphide. The cut-off grade includes the following considerations:

- Gold price US$2000/oz;
- Oxide processing recovery – 76.6%;
- Sulphide processing recovery – 80.1%;
- Mining cost $4.05/t;
- Oxide Processing $22.6/t (inclusive of G&A and selling costs)
- Sulphide Processing $30.5/t (inclusive of G&A and selling costs)
-

Metallurgy

Metallurgical performance through the oxide plant is variable based on the different weathering profile of the ore with gold recovery relationships developed for oxide and transitional ore. To better understand this relationship Simberi has worked with Stratum AI (A Canadian-based AI company) to develop an AI-based approach to better classify oxidised or partially oxidised material as either CIL treatable (suitable for the current oxide circuit) or Float circuit treatable (better suited to flotation to generate a gold concentrate for sale). This approach which looks at indicators of the degree of oxidation has been validated through it's active use in the site grade control process since December 2023 and has been used to classify material type for this Mineral Resource and Ore Reserve estimate.

Partially oxidised material classed as better suited to flotation is included along with fresh (unweathered) ore referred to as Sulphide ore. As indicated in the feasibility and FEED studies undertaken by St Barbara, this material would be treated following a plant expansion which would include the installation of a float circuit to generate a saleable gold concentrate.

Modifying Factors

No modifying factors have been applied to Mineral Resources.

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Simberi Ore Reserve Estimate Summary

Feasibility Studies

Simberi is an operating mine and has been in operation in its current form since 2013. All infrastructure required for oxide mining is in place.

The oxide Ore Reserve is based on a combination of actual and budget forecast performance and cost data, laboratory test work and metallurgical assessment for recoveries.

The sulphide Ore Reserve is based on a Front End Engineering and Design (FEED) Study undertaken by St Barbara in 2022 following a feasibility study (FS). These studies involve the expansion of the process plant to include the installation of a flotation circuit to generate a saleable gold concentrate for these Sulphide ores. St Barbara are currently undertaking further studies relating to the Sulphide project.

Classification Criteria

The basis for the classification was the Mineral Resources classification and Net Value cut-off grade.

The ex-pit material classified as Measured and Indicated Mineral Resources, has a cut-off value calculated using a Net Value Script (NVS). It is demonstrated to be economic to process and is classified as Proved and Probable Ore Reserves respectively.

Existing stockpile material is classified as Proved Ore Reserves.

The Ore Reserves do not include any Inferred Mineral Resources.

No portion of the Probable Ore Reserve has been derived from Inferred Mineral Resources.

Mining method and assumptions

For the estimation of Ore Reserves the following activities were undertaken : dilution modelling, pit optimization, detailed final and stage pit designs, waste dump and haul design, mine and process scheduling and economic evaluation on a LOM plan.

Simberi mine is an open pit operation that is currently mining and processing oxide gold ore. The operation uses a fleet of excavators and articulated dump trucks along with a fleet of ancillary equipment. This mining method is appropriate for the style and size of the mineralisation.

Geotechnical parameters were derived from a report by a specialist geotechnical consultant. Pit slopes used for pit optimization varied by deposit and depth from 33°at shallow depths in oxide to 41°at depth in fresh rock. Batter angles for pit designs varied from 45° to 60°, with 7-10 m berms and 15 m batter heights.

Pit optimisation used a mining model derived from the 2024 resource model, and a revenue factor 1 pit shell to guide final pit design.

Mining dilution was modelled using a 1.0 m dilution skin and a marginal cut-off grade. Sulphide material took priority over oxide material on the basis that there are no recovery penalties for oxide material processed in the sulphide circuit. Average dilution was 12% of tonnes and 4% of metal and average ore loss was 4% of tonnes and 2 % of metal.

Final and staged pit designs incorporated a minimum mining width of 30 m, although in some areas of Sorowar this was reduced to 25 m.

Inferred Mineral Resource blocks were treated as waste in the dilution study, pit optimization, mine scheduling and economic assessment.

All infrastructure required for oxide mining is in place, however, additional investment in the processing plant (including larger ball mill, flotation cells and concentrate handling) will be required to enable processing of the sulphide ore.

Processing method and assumptions

Oxide ore is transported via Ropecon conveyor or trucked for processing through the existing parallel comminution circuit to a conventional carbon-in-leach (CIL) circuit with an Anglo-American Research Laboratories (AARL) elution circuit and gold recovery facilities. Tailings are stored via deep sea tailings placement (DSTP).

Sulphide ore will be trucked for processing through an expanded plant with conventional flotation cells producing a gold concentrate, with flotation tails leached in the CIL circuit to produce gold doré.

All processing components are well tested technology.

Metallurgical recovery through the oxide plant is variable by deposit and amount of weathering. St Barbara have worked with Stratum AI to develop AI-based algorithms which are used to determine whether oxidised or partially oxidised ores are best suited to be fed

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through the current CIL plant or stockpiled for later treatment along with Sulphide ores. Average gold recovery for the oxide and transition ore across the Simberi deposits is 73%.

Metallurgical recovery by deposit through the sulphide plant has been developed through a testwork programme and is variable by deposit.

The amount of test work is considered appropriate and domaining has been based on identifying weathered, transitional and fresh mineralization from logging data. Average gold recovery for the sulphide ore across the Simberi deposits is 81%.

Arsenic values are included in the resource model and metallurgical recovery equations.

The existing oxide operation allows access to oxide and fresh ore for testwork and analysis.

Simberi ore is not defined by a specification, although sulphide concentrate value will be determined by meeting a gold grade specification and this is accounted for in calculations.

Cut-off Grades

Breakeven cut-off grades (COG) were calculated at a short-term gold price for oxide and transitional plant feed of US$1,800/oz and and a longer-term gold price of US$1,700/oz for sulphide feed. COG estimates are based on a net value script calculation that includes recoveries, gold price, payability; royalty, selling costs, operating costs associated with current oxide and projected sulphide operations. Economically positive blocks are considered for inclusion in the Ore Reserve.

Estimation methodology

The 2024 Simberi Ore Reserves have been prepared for both the Oxide (CIL inventory) and Sulphide (Flotation) material types. The Oxide Ore Reserves are based on a combination of actual historical performance and cost data, laboratory test work and metallurgical development and the Sulphide Ore Reserve is based on a Front End Engineering and Design (FEED) Study undertaken by St Barbara Limited and completed June 2022.

Pit optimisation, pit designs (final and stage), life of mine scheduling and economic modelling were completed as part of the 2024 Simberi Ore Reserve estimation process. Pit optimisations were undertaken using Gemcom's Whittle Optimisation software and scheduling was completed using Minemax Scheduler™ software.

Approvals and Infrastructure

St Barbara holds two environmental permits. One for the extraction of water and one for the carry out works and the discharge of waste, of which the latter was amended in June 2022 to include Sulphide Mining activities. Together these two permits form the environmental legislative basis in which SGCL can operate. Compliance with these conditions is continuously monitored and reported on in Quarterly Environment Performance Reports which are submitted to the National Government Department of Conservation Environment and Protection Authority (CEPA).

In addition, St Barbara maintains an Environment Permit for Exploration relating to Waste Discharge. This Permit is referred to as Environment Permit WDL-2A(65).

All equipment required for the mining and processing of the oxide Ore Reserve is in place and operational.

For the processing of Sulphide ores, the FS identified the following additional infrastructure, that will be located on St Barbara held tenements and leases. The infrastructure includes but is not limited to:

- Additional light fuel oil diesel generators
- Additional Water supply
- Sulphide Processing Plant
- Additional haulage network
- Expansion of accommodation and camp facilities
- New wharf to accommodate concentrate shipment to market.

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JORC Table 1 Checklist of Assessment and Reporting Criteria
Section 1 Sampling Techniques and Data – Simberi

Criteria	Comments
Sampling Techniques	• Chips from reverse circulation (RC) drilling and half-core from diamond holes (DH) have been used to sample the Simberi deposits. • Drilling by Kennecott occurred between 1984 and 1989. Subsequent drilling by Nord was carried out between 1995 and 1998. Allied drilled from 2004 to 2012. From September 2012 St Barbara have owned and operated the Simberi project. • During the early part of the Kennecott percussive drilling program (up to approximately RC320, February-May 1989), each 1 m sample was collected from a cyclone in a calico bag. The sample was dried, and jaw crushed to less than 7 mm and a 1.5 kg riffle split sub-sample dispatched for assay. The Kennecott 1m diamond drill core samples were cut in half using a diamond saw, dried, jaw crushed, and hammer milled to -30 mesh. A 200-250 g sub-sample was pulverised to -80 µm mesh before submitting to the laboratory. • Nord sampled percussive and diamond holes every 1 m. RC samples were collected in polyweave bags direct from a cyclone. Approximately 100 g of every RC sample were washed, dried, and retained for reference. RC samples were hammer milled at a Nord sample preparation facility, located on Simberi Island, to approximately -30 mesh. The sample preparation facility was supervised by contract personnel from Astrolabe Pty Ltd, an analytical laboratory in Madang. A 1 kg sub-sample was riffle split for assay dispatch and the remainder stored. Nord diamond core was photographed, logged, and cut in half using a diamond saw. One half was dried, jaw-crushed, hammer milled and reduced to a 1 kg sub-sample using a riffle splitter. The sub-samples were dispatched to Astrolabe (Madang, PNG) for final preparation and assay up until September 1996. • Allied RC samples were collected at 1 m intervals then dried. Each sample was jaw-crushed, hammer milled to -80 mesh and reduced to two approximate 1 kg sub-samples using a riffle splitter. One 1 kg sample was hammer milled to -30 mesh and the other 'reject' split was archived on site for a minimum of 3 months after assays were returned. The 1 kg crushed samples were dispatched to ALS. In mid-2008, a new core shed, and sample preparation facility was constructed with upgraded security and new sample processing equipment. This allowed a change to the RC sampling and preparation procedures. Samples from the cyclone were collected in large polyweave bags and weighed. Sub-samples were placed in calico bags. For dry/damp samples a riffle splitter was used to produce approximately 500 g for processing and approximately 500 g for 'reject' or archive. Spear sampling was conducted on wet samples to obtain two 800 g sub-samples, one for archive and one for processing. Sub-samples were sent to sample preparation for drying in electric ovens. Before mid-2008, Allied diamond core samples were processed in a similar way to the RC samples. Core was sampled on 1 m intervals, cut in half using diamond saws and dried. One half of each sample was stored on site in the secured core shed, the other half was crushed with a jaw crusher and split to two approximately 1 kg samples. One was hammer milled to -30 mesh and the 'reject' sample archived for a minimum of 3 months after assays were returned. The 1 kg samples were dispatched to ALS Townsville for fire assay. • St Barbara Diamond Drilling comprised HQ3, PQ3 or NQ3 sized core collected using standard triple tubes. Half core was sampled on nominal 1 metre intervals with the lower or left - hand side of the core for assay and is cut by an Almonte automated coresaw for sample preparation. • Half core samples were fully prepared at the company's on-site sample preparation facility on Simberi Island with 200 g pulps sent to ALS Laboratory in Townsville for further analysis. Pulp residues are stored in Townsville for six months following assay before disposal. • St Barbara RC drilling comprised 3 ½ inch diameter drill string with 114 mm hammer drill bit size. Sample is collected via a linatex lined, variable height fixed cone splitter with three outlets. One metre samples are collected in both plastic green bags and a split sample for assay to a calico bag. Duplicate samples are collected from the third outlet of the cyclone splitter.
Drilling Techniques	• From 1984 to 1990 drilling was carried out by Kennecott, comprising 447 (43,727 m) RC drill holes (3.75 - 4 inch), 73 (15,970 m) diamond drill holes and 11 (153 m) diamond holes drilled for metallurgical purposes. Most diamond holes were drilled PQ to depths of up to 200-250 m and HQ thereafter. • From 1994 to 1998 Nord completed a further 432 (26,241 m) RC holes and 35 (6,415 m) diamond holes. Many of these diamond holes were triple-tubed for metallurgical sampling and test-work. • Allied drilled 816 RC (62,003 m) holes and 219 (42,098 m) diamond holes after 2003. All diamond drill hole core has been photographed. • Downhole surveys were restricted to only some of the early Kennecott and Nord diamond drill holes and the bulk of the later Allied diamond drilling. Most of the RC drilling was shallow, averaging less than 100m, and errors due to hole deviation will be minimal. • St Barbara Limited (SBM, 2014-2018) completed diamond holes using a track mounted Cortech CSD1300G drill rig. RC drilling was completed using a track mounted Gemrok 1000H MP, along with a track mounted Schramm 650 rig. Both RC machines used sample splitting systems to deliver a representative sample of a size which made sample preparation and assaying productive. • In March 2018, SBM commenced a major RC drilling program to test the down dip extensions of the Sorowar

	orebodies. Holes were generally drilled on an azimuth of 30 degrees to the mine grid, with a dip of -60 degrees and a total depth of 250 m. The campaign used three drills supplied by Quest Exploration Drilling (QED) running a mixture of 4.5 inch and 5.25-inch RC hammers, a Schramm 685WS (500 psi/1350 cfm onboard compressor), a DML 45 (350 psi/500 cfm onboard compressor) and a UDR 1200 (no onboard compressor). All drills required additional air at high pressure to achieve the required depths. This was provided by a number of independent compressor and booster units, including a Sullair 900 20/12 (500 psi/1150 cfm), an Atlas Copco 487 (350 psi/900 cfm), an Atlas Copco XVRS (450 psi/1000 cfm), Hydro Booster AV92 (350 psi/720 cfm) and a Hurricane Booster Copco (350psi/500cfm). Drilling has proved challenging, with broken ground and high-water inflows occurring in certain areas of the Sorowar pit. This led to the loss of one rod string, and considerable time spent retrieving at least three others during the program. • Post 2018 St Barbara Diamond drilling comprised HQ3 (61.1 mm) core recovered using 1.5 m barrel. Drilling was completed by Quest Exploration Drilling (QED). When ground conditions permit, an ACT Digital Core Orientation Instrument was used by the contractor to orientate the core. • Post 2018 St Barbara RC drilling was completed by a KL150 RC drill rig using 3 ½ inch diameter drill string and 114 mm hammer drill bit size. Drilling was completed by Quest Exploration Drilling (QED).
Drill Sample Recovery	• Diamond drilling recovery percentages are measured by comparing actual metres recovered per drill run versus metres recorded on the core blocks. Recoveries average >90 % with increased core loss present in fault zones and zones of strong weathering/alteration. • RC samples are generated via the rigs cyclone splitter system and collected in calico bags. Regular inspections of the cyclone ensure it is level and free from loose material and blockages. The cyclone is cleaned at the addition of a new rod (every 6 m). When samples are wet they are collected in a 20 litre bucket, the water is decanted and the sample transferred to the calico bag.
Logging	• Diamond and RC holes are qualitatively geologically logged for lithology, structure and alteration and qualitatively and quantitatively logged for veining and sulphide mineralogy. Diamond holes are geotechnically logged with the following attributes qualitatively recorded - strength, infill material, weathering, and shape. Whole core and half core photography is completed on wet core. • All holes are logged in their entirety and data recorded in templated excel workbook for installation in the companies secure SQL database.
Sub-sampling techniques and sample preparation	• During the Kennecott percussive drilling program (up to approximately RC320, February-May 1989), the jaw-crushed sample was split to 250 g, disc pulverised to -80 µm mesh, further split to a 50 g aliquot and finely pulverised for assay. Lack of correlation between duplicate and original sample assays led Kennecott to revise the sample preparation procedure. Subsequently (up to RC447, 1992) a 250 g split (-80 mesh) was sent to the laboratory. At the laboratory a 50g aliquot was taken for pulverising and assay. A similar sized aliquot from the 200-250 g sub-samples (-80 mesh) from the Kennecott diamond core samples was fire assayed. • Every Nord 1m RC sample was hammer milled to approximately -30 mesh and a 5 g aliquot finely pulverised and fire assayed. Nord diamond core sub-samples were dispatched to Astrolabe (Madang, PNG) for final preparation and assay up until September 1996. At the laboratory the 1 kg sub-samples were dried, pulverised and a 50 g sub-sample was fire assayed for gold using an atomic absorption spectrometer (AAS) finish. After September 1996, the samples were dispatched to Australian Laboratory Services (ALS) in Townsville, Queensland, for preparation and assay using the same method. • The 1 kg (-30 mesh) sub-samples from the Allied RC drilling were dispatched to ALS and finely pulverised. A 50 g sub-sample was fire assayed and the remainder stored at their facility in Garbutt, Queensland. The Simberi processing equipment was flushed with glass before each hole was processed. After the new core shed and sample preparation facility was constructed (2008) spear sampling was conducted on wet samples to obtain two 800 g sub-samples, one for archive and one for processing. Dried RC samples of up to 600 g were milled in an LM2 to obtain a 90 % pass through 75 microns for dispatch to the laboratory. The laboratory procedures on Simberi Island were reviewed by ALS Chemex in October 2004 and found to be satisfactory. • Before mid-2008, Allied drill core samples were processed in a similar way to the RC samples. 1 kg from the half-core sample was hammer milled to -30 mesh and the 'reject' sample archived for a minimum of 3 months after assays were returned. The processing equipment was flushed with glass before each hole was processed. The 1 kg samples were dispatched to ALS Townsville for pulverising and a 50 g sub-sample was fire assayed. • All diamond drill core associated with St Barbara work program was half cut with the lower or left-hand side submitted for assay. • RC samples are generated via the rigs cyclone splitter system and collected in calico bags. Regular inspections of the cyclone ensure it is level and free from loose material and blockages. The cyclone is cleaned at the addition of a new rod (every 6 m). When samples are wet they are collected in a 20 litre bucket, the water is decanted and the sample transferred to the calico bag. • All exploration drill samples are prepared at the company's on-site sample preparation facility. Preparation involves drying, jaw crush to 70 % passing -6 mm and pulverise in LM2 to a minimum 85 % passing -75 um. • Quality control of sub-sampling consisted of insertion of (non-certified) blank control samples at a ratio of 1:35 and coarse reject duplicates at a ratio of 1:20. • Selected 200 g pulp samples are then sent to ALS Laboratory in Townsville for assay. Pulp residues are stored in Townsville for six months following assay. • No studies exist to determine if the sample sizes are appropriate for the grainsize being sampled. Sample sizes are however similar to other gold deposits.

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Quality of assay data and laboratory tests	• Kennecott evaluated the results of a re-assay program in 1992 dividing the data into oxide, transitional and sulphide as well as grade classes. As a result, the following corrections were made to the Au assay data: oxide -6.1%, transition -10.3% and sulphide -9.2%. These corrections were not used for SBM estimates. • Duplicate sampling by Nord concluded that the majority of the duplicate pairs agreed well. Nord's internal standard samples were reported as having acceptable agreement. • Allied's sample preparation and analytical control procedures included the use of blanks to monitor contamination, duplicates to test splitting and milling efficiency and standards to monitor analytical accuracy and precision. Gold assays for 288 standards showed precision well within two standard deviations. Gold assays for 574 duplicates, representing 4.2% of the (Allied) samples assayed show good agreement with a correlation coefficient of 0.994. In addition, Au assays for 570 samples submitted to a second laboratory also showed good agreement, with a correlation coefficient of 0.996. Between drill holes, sample preparation equipment was cleaned with crushed glass and compressed air. Between samples the same equipment was cleaned with compressed air and a brush. Due to the poor initial selection of blank material, the blanks analysis data could not be used to accurately determine the degree of contamination. Allied conducted Round Robin inter-laboratory checks in 2009 and 2010 with satisfactory results. • All diamond and RC drill hole pulp samples associated with the St Barbara exploration are first assayed at the on-site laboratory (EXLab). Preliminary gold analyses is complete using Aqua Regia digestion with a 25 g charge read by Atomic Absorption Spectrometry (AAS). • Selected pulp samples are then on-sent to ALS Townsville for final analyses. Pulps are analysed for Au via 50 g Fire Assay Atomic Absorption Spectroscopy (AAS) finish (Au-AA26 method) and multi-element (Ag, As, Ca, Cu, Mo, Pb, S, Sb, Zn) by Aqua Regia digest followed by Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) instrument read (ME-ICP41S method). • Dependent on the stage of exploration and other material data, selected exploration samples are assayed for full low level multi-element analysis (Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn and Zr) via 25 g four acid digest and Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) or Inductively Coupled Plasma Mass Spectroscopy (ICP-MS) via (ME-MS61method). • QC included insertion of certified reference material at a ratio of 1 in 20; insertion of in-house blank control material (1 in 35); and the EXLab insertion of coarse reject residues (1 in 35). QAQC results were assessed as each laboratory batch was received and again on a quarterly basis. Results indicate that pulveriser bowls were adequately cleaned between samples. • ALS Townsville inserted certified standards, replicates, lab repeats and complete sizing checks (1:40). • QC included insertion of certified reference material (1:20); insertion of in-house blank control material (2 at the start of each job); and the insertion of field duplicates (1:20). QAQC results were assessed as each laboratory batch was received and again at resource estimation cycles. • Over the duration of the quarter St Barbara inserted OREAS standards 252b and 254b as matched to material type and grade approximation.
Verification of sampling and assay	• There are 12 diamond holes versus RC twin drill holes. Also present are 5,385 RC versus diamond sample pairs that are located within 10 m or less that may or may not have been intentionally drilled as twin holes. For example, holes that cross close to each other or grade control RC holes next to exploration diamond drill holes. • Based on a detailed analysis of the above information and the underlying geology it is possible that gold grades in some of the older RC drilling is biased high. This may be due to difficult drilling conditions (faults, high porosity etc), down hole moisture and insufficient air pressure during RC drilling resulting sample loss and/or contamination. Much higher pressures are now used in RC drilling and operators are more experienced with the ground conditions at Simberi. Reconciliation exists from 2017 onwards and there is no evidence of a bias in the current RC drilling.
Location of data points	• All drill collars were surveyed using traditional EDM instruments based on UTM WGS 84. An audit by McMullen Nolan and Partners Surveyors Ltd in 2005, using two dual frequency GPS units, determined that the Simberi survey had very high accuracy. Since 2007, an additional QC step was introduced to record all collars with a GPS to cross check the surveyed coordinates. • St Barbara mine survey team survey drill collars. No down hole surveys were completed on the RC holes. There are 246 RC holes of depths greater than or equal to 200m. Diamond holes were surveyed down hole every 15 metres using a single shot camera.
Data spacing and distribution	• The RC grade control data is nominally on a 10m x 10m grid with most hole depths being either vertical 30m or 60m drilled at -60 degrees. Resource drilling collar locations tends to be irregular with topography controlling access. • For resource estimation diamond, RC and RC grade control data are used. however, below the pit shells, drill spacing is highly variable and this is considered during resource classification.
Orientation of data in relation to geological structure	• Gold mineralisation does not appear to be closely associated with any particular lithology although the contacts between lithologies can at times be a favourable host to gold mineralisation. It is recognised that the gold mineralization is controlled by NW–SE and NE–SW steeply dipping structures and the intersection of these also has the potential to host mineralization. Gold mineralisation is generally associated with sulphides or iron oxides occurring within all variety of hydraulic fractures, and broad disseminations in the naturally porous volcaniclastic rocks. The mix of vertical and inclined drilling goes some way to optimally intersect these mineralisation styles.
Sample security	• Company personnel or approved contractors only were allowed on drill sites. Drill samples were removed from drill sites only to a secure sampling or core logging/processing facility. Logged and cut core was

	consigned and dispatched as secure cargo to accredited laboratories for processing.
Audits or reviews	• In 2004, Golder Associates prepared an Independent Qualified Person's Technical Report of the Simberi Oxide Gold Project and in June 2011 Golders produced the Competent Person's Report for the Simberi Gold Project, which found no compromising factors deleterious to the resource. • In 2015, QG completed a review of the Simberi grade control which highlighted a potential bias between RC and diamond drilling. The results of a follow up study are discussed in the section above on verification of sampling and assaying. • No recent audits or reviews of sampling protocols have been completed

Section 2 Reporting of Exploration Results – Simberi

Criteria	Comments
Mineral Tenement and Land Tenure Status	• The reported resource is completely located within ML 136 which is leased until 2 December 2028 by the Simberi Gold Company Limited (SGCL).
Exploration Done by Other Parties	• CRA, BHP, Tabar JV (Kennecott, Nord Australex and Niugini Mining), Nord Pacific, Barrick and Allied Gold have all previously worked in this area. Nord Pacific followed by Allied Gold was instrumental in the discovery and delineation of the 5 main oxide and sulphide deposits at Simberi.
Geology	• Simberi Island represents an eroded, deeply dissected Pliocene strato-volcano. The island developed from multiple episodes of eruptive and effusive mafic to intermediate volcanism. Volcanic flows and intrusives range from basanite, alkali basalt, trachybasalt, trachyandesite, microsyenite, trachyte and feldspar porphyry. In places these units are overlain by a fining-up sequence of coarse grits, sandstone and mudstone. Bioclastic limestone platforms unconformably overlay the volcano-sedimentary sequence. A number of raised Pliocene to Pleistocene bioclastic limestone platforms flank the volcano and provide evidence of ongoing regional uplift. • Gold mineralisation at Simberi is associated with extension and basin formation (caldera collapse) after the cessation of volcanic activity. Mineralised normal faults are seen in all deposits, and an abundance of steep structures, steep fault lineations and normal fault offsets at Simberi are consistent with extensional tectonics. • The deposits comprise oxides and sulphides, reflecting the depth of weathering and degree of erosion. Significant oxides are predominantly present in the areas of highest topography, >150m RL. Oxides may persist to lower elevations on the larger faults, but in general, are absent in the lower ground. At Sorowar and Pigiput, the supergene oxides are well developed in the strongly argillic-altered breccia units, but the overlying agglomerate/tuffaceous sandstone is only weakly weathered. These upper units are only locally affected by the argillic-alteration, indicating deposition at a late stage in the extensional/mineralisation event. Weathering/supergene alteration is best developed in the strongly altered units.
Drill Hole Information	• Not Applicable
Data Aggregation Methods	• Not Applicable
Relationship Between Mineralisation Widths and Intercept Lengths	• Not Applicable
Diagrams	• Not Applicable
Balanced Reporting	• Not Applicable
Other Substantive Exploration Data	• Not Applicable
Further Work	• Future work will focus on testing extensions of mineralisation at Sorowar, Pigiput and Samat..

Section 3 Estimation and Reporting of Mineral Resources – Simberi

Criteria	Comments
Database integrity	• Drilling in 2004 and 2005 by Allied Gold was subject to significant external review. Golder Associates visited the site in April 2004 and reviewed data collection procedures. • In early 2009, the historic exploration data was transferred into a Maxwell's Datashed model and subjected to QAQC, which traps and reports errors on import. Exploration data is now entered directly into the Datashed SQL database. • Grade control data is entered into a Datamine Fusion database. This database was validated by the site Mine Geology team in 2023
Site visits	• The Competent Person most recently visited site in May 2023 and reviewed open pit mining and grade control practices. Also during this site visit toured the sample preparation and laboratory.

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Criteria	Comments
Geological interpretation	• Gold does have lithological and structural controls, but these controls are complex and cannot be easily used to generate domains for resource estimation. Leapfrog software was used to generate a 0.25 g/t Au grade shell for resource estimation. A grade shell is needed to avoid smearing grades between mineralized and essentially unmineralized areas. This grade shell is sufficiently below the resource reporting cut-offs to not introduce any significant conditional bias during resource estimation. • Locally the orientation, degree of anisotropy and extrapolation of the 0.25 g/t Au grade shell tends to be somewhat subjective however, the current grade shell is considered appropriate by the Competent Person. Further improvements could be made by incorporating additional local geological controls into the interpretation • Oxidation domains are modelled using artificial intelligence techniques , developed by Stratum AI. This approach has been utilised and tested in Grade Control models and has shown to reconcile better when compared to other approaches
Dimensions	• The northernmost deposit is Sorowar, its bulk is aligned SE-NW (1,550 m) with minor (structurally controlled) orthogonal splays towards the southwest and northeast. These splays are less than 750 m long and 300 m wide. • Pigibo is oriented W-E for approximately 740 m with a central bulge about 300 m wide and tapering to about 100 m at the western and eastern extremities. It is located about 1,500 m to the southwest of the central part of Sorowar. • Pigiput is east of Pigibo and about 1000 m south of Sorowar. It is roughly equidimensional (640 m diameter) in plan. • Munun Creek is between Pigiput and Sorowar however, there is now enough drilling to define continuous mineralisation between Pigiput and Sorowar. • Botlu is about 800 m south of Pigibo. It strikes SE-NW for approximately 680 m with an average width of around 250 m. About 700 m to the SE of Botlu is the discontinuous Pigicow deposit which strikes SW-NE for nearly 600 m with a variable width (200-450 m). • Samat is located about 700 m to the southeast of Pigicow and is aligned north-south for approximately 720 m with an average width of 300 m. Like Pigicow, Bekou is discontinuous and oriented towards the east-northeast with a strike length of around 600 m. Located about 650 m to the southwest of Samat, its width varies from 40 m to 170 m.
Estimation and modelling techniques	• Gold was estimated within and without a 0.25 ppm Au shell. • For the generation of a 0.25 g/t Au grade shell and the oxide domains all available data is used i.e., diamond, RC, auger, and blast hole. The drillholes were composited downhole to 2m and numerous orientation ellipses when creating the wireframe. • For resource estimation diamond, RC and RC grade control data are used. The RC grade control data is nominally on a 10m x 10m grid however, below the pits drill spacing is variable • Ordinary Kriging with 2m composites was used to estimate Au using Isatis.Neo software with the following parameters: • Discretisation of 5 x 5 x 3; • Local search and variogram rotation defined by dip and dip direction interpolated for Leapfrog orientation disks; • Search ellipse dimensions of 350m x 350m x 150m (Bekou), 600m x 600m x 200m (Botlu), 450m x 450m x 250m (Pigibo), 600m x 600m x 100m (Pigicow), 800m x 800m x 200m (Pigiput and Samat) and 800m x 800m x 600m (Sorowar). • No sector search with a maximum of between 20 to 24 composites; • Select all composites within the block; • Minimum of 8 composites • Top cuts were assessed for each area within the 0.25 g/t Au grade shell as well as a single domain outside the 0.25 g/t Au grade shell. Top cuts were assessed by way of: • Univariate statistics; • Histograms; • Cumulative probability plots; • Mean Au versus cut-off; • Standard deviation versus cut-off; • Coefficient of variation versus cut-off; • Metal loss versus cut-off; and • Visual plots showing the location of the capped composites. • The top cuts ranged from 13 g/t Au to 70 g/t Au with metal loss less than 1.8%. • Orientation disks were placed throughout the Simberi deposit using geology, structure, and gold grade continuity to define each disks rotation. These disks were used to guide the local orientation of the 0.25 ppm Au grade shell discussed above. The orientations from these disks were also used during kriging. Firstly, the orientations were interpolated into every block in the mineralized domains using nearest neighbour interpolation. During estimation the search ellipse and variogram were rotated according to the orientation stored in each block being estimated. • The Au estimate was validated using an inverse distance squared check estimate as well as comparison against the raw and declustered composites. The model was also validated using swath plots and visual comparison between composited and the kriged grades.

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Criteria	Comments
Moisture	• Tonnages are estimated on a dry basis.
Cut-off parameters	• The resource is reported at a gold cut-off of 0.4 g/t for oxide and 0.6 g/t for sulphide at a US$2,000/oz gold price. The cut-off grade includes the following considerations: • Gold price US$2000/oz; • Oxide processing recovery – 76.6%; • Sulphide processing recovery – 80.1%; • Mining cost $4.05/t; • Oxide Processing $22.6.t (including G&A and selling costs) • Sulphide Processing $30.5/t (including G&A and selling costs)
Mining factors or assumptions	• The mining method for all deposits is open pit, using 5 m flitches and 20 m benches • Ore blocks are generated within the site's Datamine Ore Controller software with a base SMU of 5 m x 5 m x 5 m. The optimal blocks are modified by the mine geologists to achieve a practical ore mark out, which is then located on the ground via differential GPS. • Ore mark out widths vary from 5 m to 60 m, the average being in the 30 m to 40 m range. • All material within the ore marked-out blocks, regardless of oxidation state, is delivered to ROM stockpiles, either at the Sorowar Feeder, for the rope conveyor, or to the Mill. The 500 tph rope conveyor from the Sorowar Feeder to the Mill ROM pad is an integral part of the mining process flow at Simberi, as is the downhill trucking that deliver additional 700 kt to 1 Mt per annum to the Mill ROM.
Metallurgical factors or assumptions	• Metallurgical performance through the oxide plant is variable based on the different weathering profile of the ore with gold recovery relationships developed for oxide and transitional ore. To better understand this relationship Simberi has worked with Stratum AI to develop an AI-based approach to better classify oxidised or partially oxidised material as either CIL treatable (suitable for the current oxide circuit) or Float circuit treatable (better suited to flotation to generate a gold concentrate for sale). • Sulphide ore is refractory and cannot be treated economically through a standard CIL plant. Testing has indicated the flotation of the sulphides containing the gold can be successfully undertaken to produce a gold rich sulphide concentrate.
Environmental factors or assumptions	• SGCL holds two environmental permits. One for the extraction of water and one for the carry out works and the discharge of waste, of which the latter was amended in June 2022 to include Sulphide Mining activities. Together these two permits form the environmental legislative basis in which SGCL can operate. Compliance with these conditions is continuously monitored and reported on in Quarterly Environment Performance Reports which are submitted to the National Government Department of Conservation Environment and Protection Authority (CEPA). • In addition, SGCL maintains an Environment Permit for Exploration relating to Waste Discharge. This Permit is referred to as Environment Permit WDL-2A(65).
Bulk density	• The dry bulk densities were determined using the water immersion method. Only intact pieces of core can be measured by this approach and in extremely broken ground there is potential for a bias to be introduced. Core is wrapped in cling wrap before weighing in water. This approach can be unreliable due to either entrapped air bubbles or water leaking into the sample. • Average density was applied to blocks based on the proportion of oxide, transitional and sulphide material.
Classification	• Model classification uses wireframes based on drill hole spacing. The following criteria are used to determine the limits of the wireframes: • Measured up to approximately 20m spaced drilling • Indicated up to approximately 60m • Inferred > 60m
Audits or reviews	• In June 2011, Golders produced the Competent Person's Report for the Simberi Gold Project, which found no compromising factors deleterious to the resource. The Sorowar and Pigiput/Pigibo Mineral Resource Estimate were reviewed internally in 2014 by a panel of experienced company geologists. The review covered all aspects of the estimate including source data, geological model, resource estimate and classification. In addition, the reporting of the company Mineral Resources is guided by the company's Mineral Resource Estimation System and is overseen by the Executive Leadership team prior to being reviewed by the company's Audit Committee. • The Simberi 2021 Resource was reviewed by Cube Consultants in September 2021, who concluded that there were no major flaws. Reported risks were evaluated by St Barbara and deemed to be low. Recommendations include sensitivity analysis to variogram nugget and sills, sample precision analysis and fine tuning of the oxidation surfaces. • The 2024 model has not been externally audited or reviewed. The resource estimation was completed by an independent expert.
Discussion of relative accuracy/confidence	• Uncertainty in the interpretation of the 0.25 g/t Au grade shell and the interpretation of oxidation domains are key areas of uncertainty. Gold grade uncertainty within the estimation domain is also high with about three quarters of the variability occurring in under 10m (as indicated by variography). • Recent reconciliation work has shown that although the Resource model has some short term variability, the oxide resource has reconciled well in the mid-longer term.

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Section 4 Estimation and Reporting of Ore Reserves – Simberi

Criteria	Comments
Mineral Resource Estimate for Conversion to Ore Reserves	• The Simberi June 2024 Ore Reserve estimate is based on an updated June 2024 Mineral Resource estimate compiled by Jane Bateman, who is a full-time employee and Principal Geologist of St Barbara Limited. The gold grade was estimated using ordinary kriging, with oxide reported at a cut-off grade of 0.4 g/t au and sulphide at 0.6 g/t Au. • The Mineral Resource is reported using a metal price of $2,000/oz Au and is inclusive of the Ore Reserve.
Site Visits	• An AMC Principal Mining Engineer visited the site in March 2024 on behalf of the Competent Person to examine open pit operations, pit wall exposures, mobile fleet condition, drill core samples of oxide and sulphide ore and waste, site conditions, local infrastructure and to discuss the mining and mine planning programmes with site personnel. The site visit confirmed the mine planning approach and Modifying Factors used in ore reserve estimation are appropriate. • The Competent Person is scheduled to visit the site in August 2024.
Study Status	• Simberi is an operating mine and has been in operation in its current form since 2013. All infrastructure required for oxide mining in place. • The oxide and transitional Ore Reserve is based on a combination of actual and budget forecast performance and cost data, laboratory test work and metallurgical assessment for recoveries. • The sulphide Ore Reserve is based on a Front End Engineering and Design (FEED) Study undertaken by St Barbara in 2022 following a feasibility study (FS). St Barbara are currently undertaking further studies relating to the Sulphide project. • The Competent Person considers that Modifying Factors are known to at least FS level.
Cut-off Parameters	• Breakeven cut-off grades (COG) were calculated at a short-term gold price for oxide and transitional plant feed and a longer-term gold price for sulphide feed (see Revenue factors). COG estimates are based on a net value script calculation that includes recoveries (see Metallurgical factors), gold price, payability; royalty, selling costs (see Revenue factors), operating costs (see Costs) associated with current oxide and projected sulphide operations. Economically positive blocks are considered for inclusion in the Ore Reserve.
Mining Factors or Assumptions	• A life-of-mine (LOM) plan was developed from dilution modelling, pit optimization, detailed final and stage pit designs, waste dump and haul design, mine and process scheduling and economic evaluation. • The Competent Person considers the mining method using a fleet of excavators, articulated dump trucks and associated ancillary equipment and the mine design are appropriate for the deposit. • Geotechnical parameters were derived from a report by a specialist geotechnical consultant. Pit slopes used for pit optimization varied by deposit and depth from 33°at shallow depths in oxide to 41°at depth in fresh rock. Batter angles for pit designs varied from 45° to 60°, with 7-10 m berm sand 15 m batter heights. • Pit optimization used a mining model derived from the 2024 resource model, and a revenue factor 1 pit shell to guide final pit design. • Mining dilution was modelled using a 1.0 m dilution skin and a marginal cut-off grade. Sulphide material took priority over oxide material on the basis that there are no recovery penalties for oxide material processed in the sulphide circuit. Average dilution was 12% of tonnes and 4% of metal and average ore loss was 4% of tonnes and 2 % of metal. • Final and staged pit designs incorporated a minimum mining width of 30 m, although in some areas of Sorowar this was reduced to 25 m. • Inferred Mineral Resource blocks were treated as waste in the dilution study, pit optimization, mine scheduling and economic evaluation. • All infrastructure required for oxide mining is in place, however, a sulphide ore processing plant will be required prior to processing sulphide ore.

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Criteria	Comments
Metallurgical Factors or Assumptions	• Oxide ore is transported via Ropecon conveyor or trucked for processing through the existing parallel comminution circuit to a conventional carbon-in-leach (CIL) circuit with an Anglo-American Research Laboratories (AARL) elution circuit, and gold recovery facilities. Tailings are stored via deep sea tailings placement (DSTP). • Sulphide ore will be trucked for processing through a new sulphide plant with conventional flotation cells producing a gold concentrate, with flotation tails leached in the CIL circuit to produce gold doré. • All processing components are well tested technology, and the Competent Person considers the process suited to the mineralization. • Metallurgical recovery through the oxide plant is variable by deposit and amount of weathering. St Barbara have worked with Stratum AI to develop AI-based algorithms which are used to determine whether oxidised or partially oxidised ores are best suited to be fed through the current CIL plant or stockpiled for later treatment along with Sulphide ores. Average gold recovery for the oxide and transition ore across the Simberi deposits is 73%, estimated using an ordinary kriged sulphur grade. • Metallurgical recovery by deposit through the sulphide plant has been developed through a testwork programme and is variable by deposit. • The amount of test work is considered appropriate and domaining has been based on identifying weathered, transitional and fresh mineralization from logging data. Average gold recovery for the sulphide ore across the Simberi deposits is 81%. • Arsenic values are included in the resource model and metallurgical recovery equations. • The existing oxide operation allows access to oxide, transition and fresh ore for testwork and analysis. • Simberi ore is not defined by a specification, although sulphide concentrate value will be determined by meeting a gold grade specification, which is accounted for in calculations.
Environmental	• SGCL holds two environmental permits. One for the extraction of water and one for the carrying out of work and the discharge of waste material, of which the latter was amended in June 2022 to include sulphide mining activities. Together these two permits form the environmental legislative basis in which SGCL operates. • Compliance with these conditions is continuously monitored and reported on in Quarterly Environment Performance Reports, which are submitted to the National Government Department of Conservation Environment and Protection Authority. • In addition, SGCL maintains an Environment Permit for Exploration relating to Waste Discharge (Environment Permit WDL-2A(65)).

Infrastructure	• All of the infrastructure required for the existing oxide mining and processing operation is in place and consists of:
	  ○ the oxide processing plant and process plant buildings, administration offices, training rooms, assay laboratory, site security buildings, ablution and stores
	  ○ Plant maintenance workshop facilities, light fuel oil diesel generators, water supply, mobile communication tower,
	  ○ Surface roads and communications, core shed, accommodation and camp facilities, airstrip, and wharf.
	• Sulphide ore processing additional infrastructure to be built includes:
	  ○ Sulphide processing plant
	  ○ Additional light fuel oil diesel generators and water supply
	  ○ Additional haul roads and expanded accommodation and camp facilities
	  ○ New wharf to export concentrate shipments to market

Costs	• Capital cost estimates were derived from the FEED Study and updated in the Simberi Options Study (2024) for changes in labour and fuel rates. • Operating costs for the oxide operation were derived from the SGCL budget forecast process, which is based on historical performance and forecast changes. Mining operating costs for the sulphide project were developed by AMC from first principles and current operating costs. Processing operating costs were derived from the FEED Study and updated in the Simberi Options Study (2024) for changes in labour and fuel rates. • No financial penalty results from arsenic levels in the concentrate. • Exchange rates were provided by SGCL, although all costs and revenues are estimated in US dollars. • Gold doré bars are transported by a dedicated service provider from the gold room to final destination at the ABC Refinery in Sydney. Armoured vehicles are used from start to end of shipment process. Transportation and refining charges for doré are based on current contracts and for concentrate on estimates provided by SGCL. • Royalties have been included for the PNG government royalty of 2.0% and the MRA levy of 0.5% of gold produced.
Revenue Factors	• Gold is sold on an $A basis with a call option of $US sales. A short-term gold price of US$1800/oz for doré produced from oxide and transitional ore processed in FY25-FY27 and a longer-term gold price of US$1,700/oz for doré and gold in concentrate produced from the sulphide processing plant from FY28. • A payability of 91% of gold in concentrate was used by AMC for dilution modelling and pit optimization from previous Option Study estimates, based on a sliding payability scale for gold grade in concentrate provided by SGCL. This was updated to 93.5%, based on the concentrate grade expected from sulphur grades estimated using ordinary kriging, for strategic scheduling and economic evaluation.
Market Assessment	• Gold doré and gold concentrate is readily traded on an open and transparent basis. Supply and demand is not expected to be significantly different in the timeframe in which the project operates.

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	• Forecasts assume that supply will be readily taken up by the market, as it has over a long period. SGCL has completed numerous marketing studies and has executed off-take contracts covering approximately 60~70% of expected production with contract durations ranging from 3 ~ 6 years. Contracts are in place with four traders. Concentrate is expected to be sold in the Asian market.
Economic	• Costs are discussed in the costs section and metal prices in the revenue factors section. No escalation is assumed, except as discussed under revenue factors. Economic evaluation is on a discounted (8%) basis. • The financial model demonstrates the mine has a positive net present value with all operating and capital costs included and sensitivity analysis demonstrates a robust project.

Social	• There are two community agreements which set the guidelines for community relations at Simberi:
	  ○ The Memorandum of Agreement between SGCL, the national government, New Ireland Provincial Government, Simberi Landowners Association and the Tabar Community Government
	  ○ The Compensation Agreement.

Other	• Naturally occurring risks, such as seismic or tsunami activity are considered minimal. • SGCL is operating on St Barbara's granted mining lease with all required government and statutory permits and approvals in place until mining lease expiry in December 2028. • The projected mine life for the Simberi operation is 2038, which is beyond the expiration date of the current mine lease. There are reasonable grounds to expect a mining lease extension would be granted to cover the sulphide mining operations.
Classification	• Modifying Factors are considered by the Competent Person to be at a high level of accuracy and the classification of the Mineral Resource was used as a guide for classification of the Ore Reserve. • Existing stockpile material is classified as Proved Ore Reserve. • The Competent Person believes the classification of the Ore Reserves appropriately reflects the Simberi deposit • No Probable Ore Reserves were derived from Inferred Mineral Resources.
Audits or reviews	• No audits or reviews have been conducted on the Ore Reserve. • AMC has undertaken peer reviews of various the aspects of Simberi mine planning for the FEED Study and various SGCL budget forecasts.
Discussion of relative accuracy/ confidence	• The confidence levels as expressed in the Mineral Resources estimates were accepted in the respective Ore Reserves classification categories. The estimates relate to global estimates in the conversion of Mineral Resources to Ore Reserves, due largely to spacing of the drill data on which the estimates are based relative to the intended local selectivity of mining operations. • The oxide Ore Reserve is part of an established mine which has been in operation in its current form since 2013, and as such the level of confidence is high. Operating practices of the grade control system have matured as the mining operation has advanced through the various alteration states. • Modifying Factors were developed from current mine performance data and FS level FEED Study estimates. The Competent Person considers that Modifying Factors are reasonable and provide confidence in the Ore Reserve. Metal price assumptions are subject to market forces and present an area of uncertainty. • The Competent Person considers that there are reasonable grounds to anticipate all relevant legal, environmental, and social approvals to operate will continue to be granted within the LOM timeframe. • Reconciliation analysis has shown a reasonable, although variable over time, match between Ore Reserve and mill production results.

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