ASX Release

13 February 2024

Mineral Resource and Ore Reserve Statement as at 31 December 2023

Highlights

Simberi

- **Simberi Mineral Resources up 0.8 Moz (20%) to 4.8 Moz (net of depletion)**
  - Drill results for 2023/24 program not included – upgrade relates to resource definition drilling carried out in FY22 and FY23, revised mineralisation and oxidation models and updated economic inputs
  - FY24 Resource Definition drilling continues to target upgrade of 1 Moz from Inferred to Indicated
- **Simberi Ore Reserves stable at 2.0 Moz (net of depletion)**
  - Oxide depletion replaced through cut-off grade and other operational strategies to extend oxide life

Atlantic

- **Atlantic Mineral Resources stable at 2.0 Moz (net of depletion)**
- **Atlantic Ore Reserves trimmed by 0.2 Moz to 1.4 Moz (net of depletion)**
  - 15-Mile Ore Reserves increased by 40 koz following Pre-Feasibility Study
  - Beaver Dam Ore Reserve reduced by 120 koz to reflect the smaller mine design selected to minimise surface disturbance footprint
  - 100 koz reduction at Touquoy from mining and processing depletion and write-off of remaining low grade stockpiles

St Barbara Limited ACN 009 165 066
Level 19, 58 Mounts Bay Road, Perth WA 6000
PO Box 1161, West Perth, WA 6872
T +61 8 9476 5555 www.stbarbara.com.au
ASX: SBM

Managing Director and CEO Andrew Strelein said “We are pleased to provide this annual update to St Barbara’s Mineral Resource and Ore Reserve Statement showing overall Mineral Resources at Simberi and Atlantic has grown from 5.9 Moz to 6.7 Moz. This growth has primarily come from Simberi and this is before any inclusion of results from the ongoing FY24 program.”

“An updated Statement is planned for the end of FY24 and will incorporate results available from the resource definition program where we are targeting an upgrade of 1.0 Moz from Inferred to Indicated Mineral Resource.”

“Our Mineral Resource position of 6.7 Moz is incredible for a Company of our market capitalisation. We recognise that the value proposition for St Barbara lies in demonstrating the development potential of these projects and we are moving quickly on the respective work programs.”

St Barbara attaches the Mineral Resource and Ore Reserve position at 31 December 2023 confirming the following totals for the Company:

- Total Ore Reserves are estimated at 70.8 Mt @ 1.5 g/t Au for 3.3 Moz of contained gold, comprising:
    - Simberi Operations 32.5 Mt @ 1.9 g/t Au for 2.0 Moz of contained gold
    - Atlantic Operations 38.3 Mt @ 1.1 g/t Au for 1.4 Moz of contained gold

- Total Mineral Resources[1] are estimated at 154.9 Mt @ 1.4 g/t Au for 6.7 Moz of contained gold, comprising:
    - Simberi Operations 98.3 Mt @ 1.5 g/t Au for 4.8 Moz of contained gold
    - Atlantic Operations 56.5 Mt @ 1.1 g/t Au for 2.0 Moz of contained gold

During the 12 months since the last statement the Company sold the Leonora Assets including various deposits acquired from Bardoc Gold Limited comprising of the relevant Mineral Resources and Ore Reserves. The tables reflect that sale transaction.

Authorised by

Board of Directors

For more information

Investor Relations

David Cotterell
General Manager Business Development & Investor Relations

info@stbarbara.com.au
T: +61 3 8660 1959
M: +61 447 644 648

Media Relations

Paul Ryan / Michael Weir
Citadel-MAGNUS
M: +61 409 296 511 / +61 402 347 032

[1] Mineral Resources are reported inclusive of Ore Reserves

Overview

St Barbara's Mineral Resources and Ore Reserves position at 31 December 2023 is summarised and compared with the 31 December 2022 statement in Tables 1 and 2.

The Company sold the Leonora Assets, including the Bardoc properties, to Genesis Minerals Limited on 30 June 2023. The tabulation reflects the removal of the respective Mineral Resources and Ore Reserves relating to that transaction.

Project	31 December 2022 Mineral Resources			31 December 2023 Mineral Resources		
	Tonnes (Mt)	Grade (g/t Au)	Ounces ('000)	Tonnes ('000)	Grade (g/t Au)	Ounces ('000)
Gwalia Deeps (WA)	24.2	5.8	4,470	-	-	-
Gwalia Open Pit (WA)	9.0	2.2	630	-	-	-
Gwalia Shallows	3.4	3.5	390	-	-	-
Harbour Lights (WA)	13.7	1.7	750	-	-	-
Tower Hill (WA)	20.7	1.8	1,180	-	-	-
Total Leonora Operations	**71.0**	**3.2**	**7,420**	-	-	-
Aphrodite	25.5	2.0	1,660	-	-	-
Zoroastrian	7.0	2.3	520	-	-	-
Excelsior	11.3	1.0	350	-	-	-
Bardoc Satellite Open Pits	9.4	1.6	480	-	-	-
Total Bardoc Operations	**53.2**	**1.8**	**3,010**	-	-	-
Simberi Oxide (PNG)	15.6	1.1	540	23.3	1.1	790
Simberi Sulphide (PNG)	67.5	1.6	3,430	75.1	1.6	3,970
Total Simberi Operations	**83.1**	**1.5**	**3,980**	**98.3**	**1.5**	**4,760**
Touquoy	1.3	0.6	20	-	-	-
Beaver Dam	11.1	1.3	450	11.1	1.3	450
15-Mile	23.6	1.0	780	24.5	1.1	840
Cochrane Hill	21.0	1.0	690	21.0	1.0	690
Total Atlantic Operations	**57.0**	**1.1**	**1,940**	**56.5**	**1.1**	**1,980**
Grand Total	**264.4**	**1.9**	**16,350**	**154.9**	**1.4**	**6,740**

Table 1: St Barbara December 31 2023 and December 31 2022 Mineral Resources Comparison

Project	31 December 2022 Ore Reserves			Production	31 December 2023 Ore Reserves		
	Tonnes (Mt)	Grade (g/t Au)	Ounces ('000)	Ounces ('000)	Tonnes (Mt)	Grade (g/t Au)	Ounces ('000)
Gwalia Deeps (WA)	12.6	5.0	2,040	**61**	-	-	-
Tower Hill (WA)	9.7	1.8	560		-	-	-
Total Leonora Operations	**22.3**	**3.6**	**2,600**		-	-	-
Aphrodite (WA)	2.8	3.6	320	**-**	-	-	-
Zoroastrian (WA)	0.8	3.8	100		-	-	-
Total Bardoc Operations	**3.6**	**3.6**	**420**		-	-	-
Simberi Oxide (PNG)	7.6	1.2	280	**65**	7.8	1.2	300
Simberi Sulphide (PNG)	26.6	2.0	1,680		23.8	2.2	1,640
Simberi Stockpile	0.7	1.3	30		0.9	1.2	40
Total Simberi Operations	**34.8**	**1.8**	**1,990**		**32.5**	**1.9**	**1,980**
Beaver Dam	7.8	1.4	350	**29**	4.5	1.5	220
15-Mile	16.8	1.1	580		18.5	1.0	620
Cochrane Hill	15.4	1.0	510		15.4	1.0	510
Touquoy	0.6	0.7	10		0.0	0.0	0
Atlantic Stockpiles	5.4	0.5	80		0.0	0.0	0
Total Atlantic Operations	**46.0**	**1.0**	**1,530**		**38.3**	**1.1**	**1,350**
Grand Total	**106.7**	**1.9**	**6,540**	**155**	**70.8**	**1.5**	**3,330**

Table 2: St Barbara December 31 2023 and December 31 2022 Ore Reserves Comparison

The company's Mineral Resources have increased above net mining depletion by 0.8 Moz (exclusive of the sale of Leonora and Bardoc properties). This includes:

- Simberi Operations increased by a net 780 koz due to incorporation of resource definition drilling that took place over FY22 and FY23, revised mineralisation and oxidation models and an updated optimal shell based on updated economic inputs based on most recent FY22 study findings including a larger mill throughput rate (3.7 vs 3.0 Mtpa).
- Atlantic Operation increased by 40 koz due to updated Resource model at 15-Mile *(refer ASX release 10 October 2023 – 'Strong 15 Mile Project Pre-feasibility Results'*)

Exclusive of the sale of Leonora and Bardoc assets there has been a modest overall reduction of 0.2 Moz to the Company Ore Reserves primarily relating to the selection of a smaller mine design for Beaver Dam but also because of depetion at Touquoy and the removal of remaining inventory as the project moves to closure.

Mineral Resources Revisions

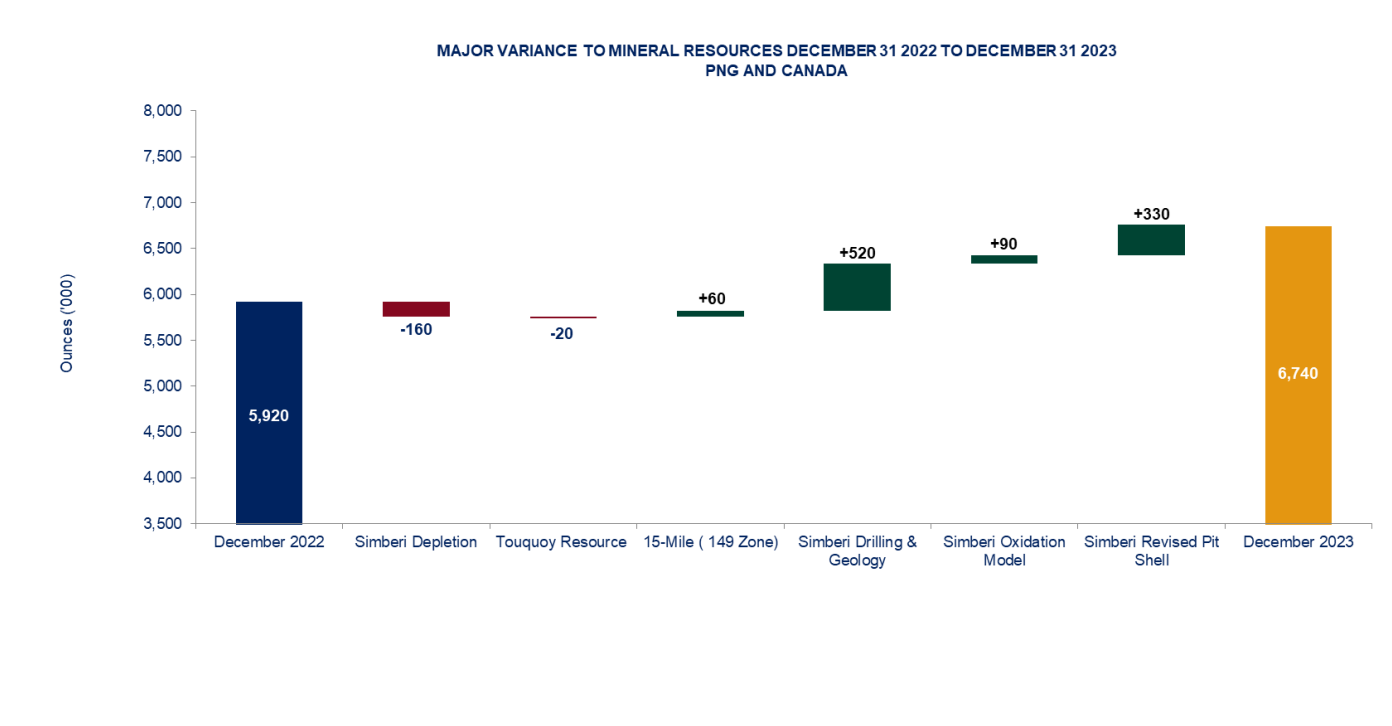

Figure 1: Waterfall chart illustrating variations in Mineral Resources 31 December 2022 to 31 December 2023, excluding Leonora assets which were sold on 30 June 2023.

Simberi Operations

The Simberi Mineral Resources increased in 2023 by 780 koz above net mining depletion of 160 koz. Approximately 520 koz were added through the finalisation of an updated Resource model incorporating an additional 9,000 metres of resource definition drilling and 51,000 metres of grade control drilling completed since the model was previously updated in 2021. A further 90 koz are estimated to have been added as a result of increasing the lower sulphur threshold for oxide ore from 0.4% to 1.0% and reducing the sulphur/iron ratio threshold from 3.0 to 1.7 to reflect the operational successes in processing greater proportions of partially oxidised material.

Finally, an increase of 330 koz arose from changes to the processing rate assumptions for the Mineral Resource shell. The previous Mineral Resource was reported constrained by an US$1875/oz optimal pit shell with economic parameters derived from a mill throughput rate of 3.0 Mtpa whereas this latest US$1875/oz shell was revised based on the 2022 study work derived from a mill throughput rate of 3.7 Mtpa producing a larger optimal shell.

Atlantic Operations

The Atlantic Operations Mineral Resources increased in 2023 by 40 koz overall.

An updated Resource for 15-Mile was reported during 2023 which included the previously unreported 149 Zone pit (+60 koz) *(refer ASX release 10 October 2023 – 'Strong 15 Mile Project Pre-feasibility Results')*. The Beaver Dam and Cochrane Hill Mineral Resources are unchanged.

Lastly, the remnant Touquoy Mineral Resource is no longer reported following the completion of mining and planned closure of the site, resulting in a reduction of 20 koz.

Ore Reserves Revisions

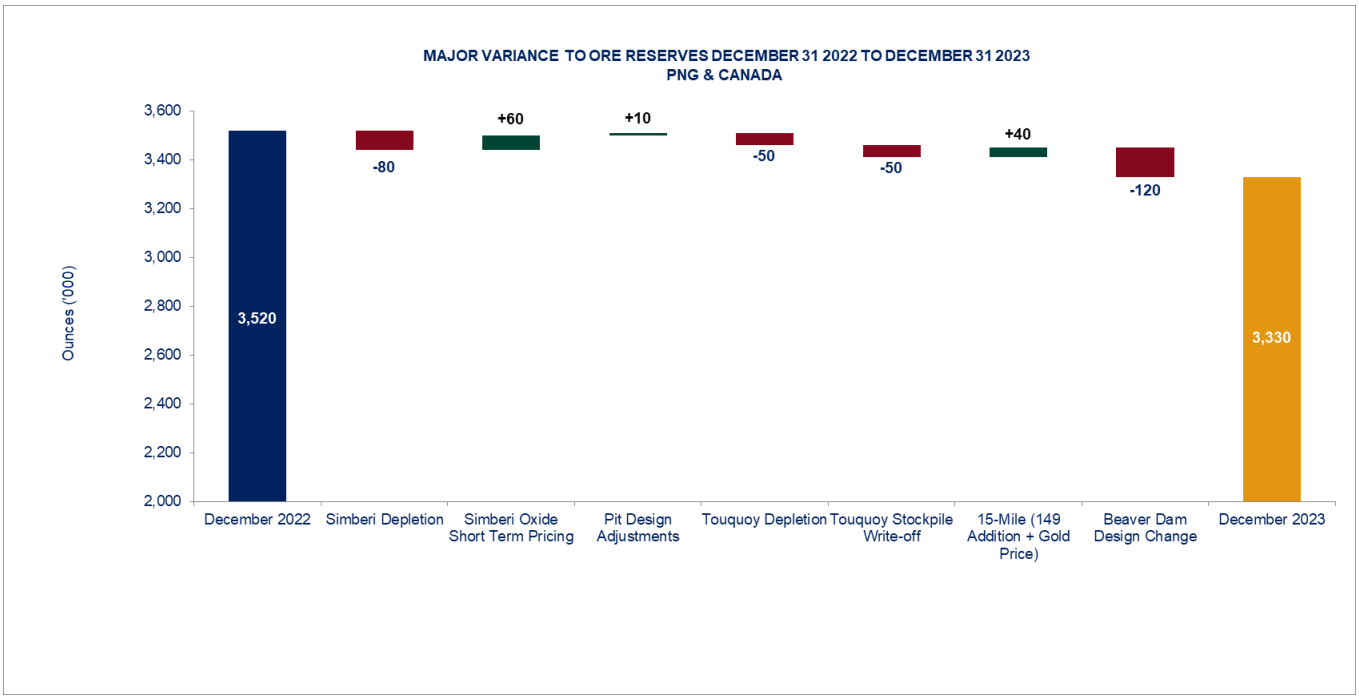

Figure 2: Waterfall chart illustrating variations in Ore Reserves 31 December 2022 to 31 December 2023, excluding Leonora assets which were sold on 30 June 2023.

Simberi Operations

Simberi's Ore Reserve position remained relatively stable during the year decreasing by only 10 koz after depletion. Depletion of 80 koz was offset by two main items:

- An additional 60 koz from lowering the cut-off grade for planned oxide mining to reflect the a higher gold price of US$1,800/oz (whereas Sulphide Ore Reserves continues to be evaluated at US$1,500/oz consistent with prior year price).
- Pit designs remained largely unchanged with some adjustments being made and overall the net difference between pit designs accounting for localised resource model changes balances out slightly positive by 10 koz.

The large increase in Mineral Resources for Simberi was not reflected in the Ore Reserves as the majority of the increase was from addition of Inferred Mineral Resources. Work is currently underway to revise the Resource Model classifications including incorporation of the information to come from the current Resource Definition drilling program. These changes will be reflected in a planned Mineral Resource and Ore Reserve release due at the end of FY24.

Atlantic Operations

Overall Ore Reserves for the Atlantic Operations decreased by 180 koz driven by the following changes:

- Reduction of 120 koz at Beaver Dam based on selection of a smaller pit shell.
- Depletion of 50 koz from completion of open pit mining of the Touquoy Pit and processing of Touquoy ore stockpiles.
- Reduction of 50 koz due to the write-off the remaining Touquoy ore stockpiles as the Touquoy mine has now entered closure and decomissioning of the processing plant.
- Increase of 40 koz of Ore Reserves at 15-Mile from the recent Pre-feasibility Study *(refer to ASX release 10 October, 2023 – 'Strong 15 Mile Project Pre-feasibility Results')* which added the additional Pit 149

accounting for 28 koz and a net increase of 12 koz from the use of a higher gold price (US$1,500/oz vs US$1,300/oz from the previous study).

Governance and Internal Controls

St Barbara's Mineral Resources and Ore Reserves have been compiled by suitably qualified personnel and with oversight from the Company's Mineral Resources and Ore Reserves Committee. The role of this Committee is to provide governance oversight to the Mineral Resources and Ore Reserves estimation systems, ensuring the quality and accuracy of the Company' s Group Mineral Resources and Ore Reserves. The Committee provides assurance to the Board Audit & Risk Committee on compliance with the Mineral Resources and Ore Reserves governance framework and systems. The Committee also ensures that Mineral Resources and Ore Reserves comply with the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code 2012 Edition'.

The Committee ensures proper corporate governance, allocation of suitably qualified resources and management of business risk in relation to the estimation of Mineral Resources and Ore Reserves. The Committee achieves this objective by exercising professional judgement, formal annual reviews of Mineral Resources and Ore Reserves estimates, and review of reconciliations when required.

Ore Reserves 31 December 2023

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	3.5	1.3	140	4.3	1.2	160	7.8	1.2	300
	Simberi Sulphide	6.2	2.0	410	17.6	2.2	1,240	23.8	2.2	1,640
	Simberi Stockpile	-	-	-	0.9	1.2	40	0.9	1.2	40
	Total Simberi	**9.7**	**1.8**	**550**	**22.8**	**2.0**	**1,440**	**32.5**	**1.9**	**1,980**
Canada	Beaver Dam	2.9	1.6	140	1.6	1.5	80	4.5	1.5	220
	15-Mile	4.2	1.0	140	14.3	1.0	480	18.5	1.0	620
	Cochrane Hill	10.2	1.1	350	5.1	1.0	160	15.4	1.0	510
	Total Atlantic	**17.3**	**1.2**	**630**	**21.0**	**1.1**	**720**	**38.3**	**1.1**	**1,350**
	Total All Projects	**27.0**	**1.4**	**1,180**	**43.8**	**1.5**	**2,160**	**70.8**	**1.5**	**3,330**

Notes

1. Ore Reserves are based on a gold price of: Simberi (US$1,800/oz Oxide & US$1,500/oz Sulphide) and Atlantic (C$1,920/oz for Beaver Dam & 15-Mile and C$1,688/oz Cochrane Hill)
2. Cut-off grades Simberi (based on a Net Value Script (NVS), however in the order of 0.5 g/t Au for Oxide & 0.8 g/t for Sulphide), Atlantic Mining (0.3 g/t Au for 15-Mile & Cochrane Hill and 0.5 g/t Au for Beaver Dam).
3. Mineral Resources are reported inclusive of Ore Reserves.
4. Rounding may result in apparent summation differences between tonnes, grade and contained metal.

Mineral Resources 31 December 2023

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	4.9	1.1	180	7.9	1.0	250	10.5	1.1	360	23.3	1.1	790
	Simberi Sulphide	10.1	1.6	530	37.5	1.7	2,030	27.4	1.6	1,410	75.1	1.6	3,970
	Total Simberi	**15.1**	**1.5**	**710**	**45.4**	**1.6**	**2,280**	**37.9**	**1.5**	**1,770**	**98.3**	**1.5**	**4,760**
Canada	Beaver Dam	5.1	1.3	210	4.8	1.2	190	1.2	1.4	50	11.1	1.3	450
	15-Mile	4.4	1.0	150	17.7	1.0	590	2.4	1.3	100	24.5	1.1	840
	Cochrane Hill	10.7	1.1	370	7.7	1.0	240	2.6	1.0	80	21.0	1.0	690
	Total Atlantic Operations	**20.2**	**1.1**	**730**	**30.2**	**1.0**	**1,020**	**6.1**	**1.2**	**230**	**56.5**	**1.1**	**1,980**
	Total All Projects	**35.3**	**1.3**	**1,440**	**75.5**	**1.4**	**3,300**	**44.0**	**1.4**	**2,000**	**154.9**	**1.4**	**6,740**

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), Atlantic Operations (0.3 g/t Au)
3. Simberi Mineral Resources are reported constrained by a US$1,875/oz pit shell. 15-Mile Resources are constrained by a US$2,000/oz pit shell. Beaver Dam and Cochrane Hill are constrained by a US$1,800/oz pit shell.
4. 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 compiled by Mr. David Plowman who is a Member of the Australasian Institute of Mining and Metallurgy. David Plowman 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 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. David Plowman 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 Ore Reserves at Atlantic Operations is based on information compiled by Mr. Marc Schulte who is a Member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta. Marc Schulte is an associate of Moose Mountain Technical Services 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". Marc Schulte 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:

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

The first step of model classification uses an automated approach to classify the resource using drill hole spacing. The following criteria are used:

1. Measured - Utilising a quadrant search of 15 mX x 15 mY x 7.5 mZ (total size of the ellipse is 30m x 30m x 15m), there must be at least one composite in each quadrant;
2. Indicated - Utilising a quadrant search of 30 mX x 30 mY x 15 mZ (total size of the ellipse is 60m x 60m x 30m), there must be at least one composite in each quadrant; and
3. Inferred - Utilising a quadrant search of 55 mX x 50 mY x 25 mZ (total size of the ellipse is 110m x 100m x 50m), there must be at least one composite in three of the quadrants.

The following additional restrictions were applied within these classifications:

1. For Measured the slope of regression was greater or equal to 0.85; and
2. For Indicated the slope of regression was greater or equal to 0.6.

Finally, manually generated wireframes were used to smooth any artifacts from the automated classification. For example, a single block of Inferred within Indicated

Blocks outside the 0.25 grade shell are unclassified.

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. Transitional material is treated as either oxide or sulphide based the chemical equations provided by metallurgists:

- Oxide: S<=1.0% OR Fe/S>10
- Oxide: 1.0% > S <= 2% AND 1.7 <= Fe/S <= 10
- Sulphide: S>1.0% AND Fe/S < 1.7 OR S>2%

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. Average gold recovery across the Simberi oxide deposits is 84% whilst gold recovery for the transitional ore ranges from around 60-75%.

Sulphide ore is refractive 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.

Modifying Factors

No modifying factors have been applied to Mineral Resources.

Simberi Ore Reserve Estimate Summary

Feasibility Studies

The current mine and processing plant configuration has been in operation since 2013.

Oxide and Transitional Ore Reserves are based on a combination of actual historical performance and cost data, laboratory test work and metallurgical development.

The Sulphide Ore Reserves are based on an internal St Barbara Front End Engineering and Design (FEED) Study completed in June 2022. St Barbara are currently undertaking further studies.

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 Probable 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

Mining and assumptions including recovery and dilution.

The method for Ore Reserves estimation included: pit optimisation, final pit and phase designs, consideration of mine and mill schedules, all identified modifying factors and economic valuation.

Simberi mine is an open pit operation that is 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.

The pit optimisation was run on a mining model based on the 2023 Mineral Resources block model, and the strategy for the final pit selection was based on a revenue factor 1. Final pit designs incorporating further practical mining considerations, such as minimum mining width, were carried out using these optimisation shells.

Mining dilution is based on localised mining dilution modelling completed on the 2021 Mineral Resource model. The dilution and ore loss modelling were designed to reflect the current conditions and practices on site while also be reflective of future mining. Average dilution and ore loss factors from the 2021 dilution modelling have been applied to the 2023 Resource Model. The factors are:

Dilution:

- Oxide – 8%
- Sulphide – 5%

Ore Loss

- Oxide – 7%
- Sulphide – 2%

Minimum mining width (bench size) is typically more than 40 m but is ~30 m in some isolated areas.

No Inferred Mineral Resources material has been included in optimisation and/or Ore Reserves reporting.

Replacement costs, expected maintenance costs and costs of additional items required have been accounted for in the life of mine evaluation on which the project costings are based.

Mining rates are planned to increase with all additional costs associated with this increase included in the estimation of the Ore Reserve.

The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants.

Processing method and assumptions

Ore from the various Simberi deposits is trucked and conveyed to the Simberi oxide processing plant. The oxide plant consists of a parallel comminution circuit, a conventional carbon-in-leach (CIL) circuit with an AARL elution circuit, and gold recovery facilities. Tailings are disposed via Deep Sea Tailings Placement (DSTP).

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. Average gold recovery across the Simberi oxide deposits is 84% whilst gold recovery for the transitional ore ranges from around 60-75%.

In previous Mineral Resource estimations, the weathering material classification has been based solely on visual geological logging data. The 2023 Mineral Resource model used for the December 2023 Ore Reserves estimation includes material classification based on logging data for Oxide and Sulphide material. However, visually logged Transitional material was separated on a block-by-block basis using the Fe and S assays so that the Transitional material is now separated into Oxide (CIL Inventory) and Sulphide materials, based on its expected metallurgical behaviour to maximise the metallurgical recovery for each material type. (i.e. CIL vs Float feed).

Given that visually logged transitional material is separated based on the expected metallurgical behaviour, the material that is categorised as transitional material with oxide metallurgical performance will behave like oxide material when processed through the CIL Plant. As a result, the Transitional Ore Reserves with oxide metallurgical behaviour have been reported with the Oxide Ore Reserves.

The sulphide ore is scheduled to be processed in a new sulphide concentrator to produce a gold sulphide concentrate for export. The flotation tailings will be leached through the existing CIL circuit to produce doré. FS level test work to determine total gold recovery to concentrate and doré is expected to vary by deposit and average around 83%.

Cut-off Grades

Breakeven cut-off grades (COG) were calculated at a US$1800/oz gold price, for Oxide and Transitional Ore Reserves and US$1500/oz for Sulphide Ore Reserves

The ex-pit COG estimates are based on a Net Value Script (NVS) calculation that incorporates commodity price assumptions, recoveries and estimated payables; and costs associated with current and projected operating conditions.

The NVS routine identifies material that is both suitable and potentially economic for processing in the Mineral Resource Model. This material is then considered for inclusion in the Ore Reserves process.

Estimation methodology

The 2023 Simberi Ore Reserves have been prepared for both the Oxide and Transition (CIL inventory) and Sulphide (Flotation) material types. The Oxide and Transitional 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.

Whittle Optimisation, pit designs (final and stage), life of mine scheduling and economic modelling were completed as part of the 2023 Simberi Ore Reserve estimation process. Pit optimisations were undertaken using Gemcom's Whittle Optimisation software and scheduling was completed using Micromine's Alastri Tactical Scheduler.

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 and transitional 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.

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.
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 revies 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 converting Inferred Resources to Indicated and Measured Resources.

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.

Criteria	Comments
	• Grade control data is entered into a Datamine Fusion database. The integrity of the database is acceptable, however data validation during entry needs improving.
Site visits	• The Competent Person most recently visited site in May 2023.
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. To better understand the impact of uncertainty it is recommended that multiple 0.25 g/t Au grade shells be generated and used for resource estimation. • Oxidation domains (oxide, transitional and sulphide (fresh)) are based on logging from drill holes. Proportions of oxide, sulphide and transitional were estimated by indicator kriging and validated against the wireframes used to define oxide domains in previous estimations. Validation consisted of visual inspection and grade tonnage curves.
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	• Oxidation domaining was used to define material types however this domaining was not used in the estimation of Au. 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 highly variable and this is considered during resource classification. • Ordinary Kriging with 2m composites was used to estimate Au with the following parameters: • Minimum of 6 composites; • Maximum of 16 composites; • No quadrant or octant search; • Search of 600 m x 600 m x 200 m (blocks informed by large composite to block distances are not classified as a resource – see section on resource classification); • Anisotropic distances were used to select the closest composites; • Parent cell discretisation for kriging of 5 x 5 x 2 in X, Y and Z dimensions; • All composites within a block are used to estimate that block; and • All domain boundaries were treated as hard during estimation. • The parent block model dimensions were 10 mX x 10 mY x 5 mZ, which is equal to the spacing of the better drilled areas. • Outlier restricted kriging was used with grade above a specified cut-off cut to that value when the composite is greater than 15 m from the block being estimated. An outlier cut-off of 30 ppm was used within the 0.25 ppm grade shell. An outlier cut-off of 0.7 ppm was used outside the grade shell. • 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.

Criteria	Comments

	• 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.
	• In the deeper less well drilled parts of the deposit kriging from wide spaced data into relatively small blocks will tend to over-smooth the estimate and conditional simulation or non-linear estimation is recommended for these areas.
	• Resource drilling was analysed for iron and sulphide. Ordinary Kriging with 1m composites was used to estimate iron and sulphide as 99% of samples were 1m in length. The estimation parameters were:
	  ○ Horizontal search ellipse of 80 mX x 80 mY x 4 mZ, expanded by a factor 2 and 3 for the second and third estimates.
	  ○ Minimum of 4 composites and a maximum 18 of composites for the first and second estimate;
	  ○ Minimum of 1 composite and a maximum 18 of composites for the third estimate;
	  ○ A maximum 3 of composites per drillholes; and
	  ○ Oxidation domain boundaries were treated as hard during estimation.

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. Transitional material is treated as either oxide or sulphide based on the following chemical equations: • Oxide: S<=1.0% OR Fe/S>10 • Oxide: 1.0% > S <= 2% AND 1.7 <= Fe/S <= 10 • Sulphide: S>1.0% AND Fe/S < 1.7 OR S>2%
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 365 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. Average gold recovery across the Simberi oxide deposits is 84% whilst gold recovery for the transitional ore ranges from around 60-75%. • 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. • There is limited density data. Generally, one measurement per core tray or less. Density was estimated into the block model using inverse distance squared interpolation.
Classification	• The 2023 model classification was taken from the 2021 model with updated areas where drilling has indicated increased confidence. • The first step of the model classification was an automated approach was utilised to classify the resource using drill hole spacing. The following criteria were used: • Measured - Utilising a quadrant search of 15 mX x 15 mY x 7.5 mZ (total size of the ellipse is 30m x 30m x 15m), there must be at least one composite in each quadrant; • Indicated - Utilising a quadrant search of 30 mX x 30 mY x 15 mZ (total size of the ellipse is 60m x 60m x 30m), there must be at least one composite in each quadrant; and • Inferred - Utilising a quadrant search of 55 mX x 50 mY x 25 mZ (total size of the ellipse is 110m x 100m x 50m), there must be at least one composite in three of the quadrants. • Blocks outside the 0.25 grade shell were unclassified. The following additional restrictions were applied within these classifications: • For Measured the slope of regression was greater or equal to 0.85; and • For Indicated the slope of regression was greater or equal to 0.6. • Finally, manually generated wireframes were used to smooth any artifacts from the automated classification.

Criteria	Comments
	For example, a single block of Inferred within Indicated. • To meet the JORC (2012) criteria for reasonable prospects of eventual economic extraction, only the material above a pit shell has been considered as a resource. This ultimate pit shell was calculated using a gold price of US$1,875 with Measured, Indicated, and Inferred resources used to optimise the pits. Resources were depleted using the end of November 2022 surface.
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.
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). Finally, there is still the possibility that some of the older RC drilling has gold grades that are biased high. This risk is reducing as additional drilling is ongoing. • No geostatistical study has been carried out to determine confidence limits for the resource. Conditional simulation into conservative, intermediate and optimistic domains is recommended.

Section 4 Estimation and Reporting of Ore Reserves – Simberi

Criteria	Comments
Mineral Resource Estimate for Conversion to Ore Reserves	• The Ore Reserve estimate is based on the Mineral Resource estimate compiled by Jane Bateman who is a full-time employee of St Barbara Limited. The gold grade was estimated using ordinary kriging. • The Mineral Resources are reported inclusive of the Ore Reserve.
Site Visits	• The Competent Person, David Plowman, is currently a full-time employee of Simberi Gold Company Limited, on a three week on, two weeks off roster based at the Simberi mine site.
Study Status	• The current mine and processing plant configuration has been in operation since 2013. • Oxide and Transitional Ore Reserves are based on a combination of actual historical performance and cost data, laboratory test work and metallurgical development. • The Sulphide Ore Reserve is based on a Front End Engineering and Design (FEED) Study undertaken by St Barbara Limited and completed June 2022. St Barbara are currently undertaking further studies relating to the Sulphide expansion.
Cut-off Parameters	• Breakeven cut-off grades (COG) were calculated at a US$1800/oz gold price, for Oxide and Transitional Ore Reserves and US$1500/oz for Sulphide Ore Reserves. • The ex-pit COG estimates are based on a Net Value Script (NVS) calculation that incorporates commodity price assumptions, recoveries and estimated payables; and costs associated with current and projected operating conditions. • The NVS routine identifies material that is both suitable and potentially economic for processing in the Mineral Resource Model. This material is then considered for inclusion in the Ore Reserves process. • For the cost assumptions please see the “Costs” section. • For the price assumptions please see the “Revenue factors” section.

Mining Factors or Assumptions	• The method for Ore Reserves estimation included: pit optimisation, final pit and stage designs, consideration of mine and mill schedules, all identified modifying factors and economic valuation.
	• 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.
	• The pit optimisation was run on a mining model based on the 2023 Mineral Resources block model, and the strategy for the final pit selection was based on a revenue factor 1. Final pit designs incorporating further practical mining considerations, such as minimum mining width, were carried out using these optimisation shells.
	• Mining dilution is based on localised mining dilution modelling completed on the 2021 Mineral Resource model. The dilution and ore loss modelling were designed to reflect the current conditions and practices on site while also be reflective of future mining. Average dilution and ore loss factors from the 2021 dilution modelling have been applied to the 2023 Resource Model.
	• Indicative dilution and ore loss factors are shown below:
	• Dilution:
	  ○ Oxide – 8%
	  ○ Sulphide – 5%
	• Ore Loss
	  ○ Oxide – 7%
	  ○ Sulphide – 2%
	• Minimum mining width (bench size) is typically more than 40m but is ~30m in some isolated areas.
	• No Inferred Mineral Resources material have been included in the optimisation and/or Ore Reserves reporting.
	• Replacement costs, expected maintenance costs or costs of additional items required have been accounted for in the life of mine evaluation on which the project costings are based.
	• Mining rates are planned to increase with all additional costs associated with this increase included in the estimation of the Ore Reserve.
	• The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants.

Criteria	Comments
Metallurgical Factors or Assumptions	• Ore from the various Simberi deposits is trucked and/or conveyed to the Simberi oxide processing plant. The oxide plant consists of a parallel comminution circuit, a conventional carbon-in-leach (CIL) circuit with an AARL elution circuit, and gold recovery facilities. Tailings are disposed via Deep Sea Tailings Placement (DSTP). • 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. Average gold recovery across the Simberi oxide deposits is 84% whilst gold recovery for the transitional ores are range from around 60-75%. • The 2023 Mineral Resource model used for the December 2023 Ore Reserves estimation includes material classification based on logging data for Oxide and Sulphide material. However, visually logged Transitional material was separated on a block-by-block basis using the Fe and S assays so that the Transitional material is now separated into Oxide (CIL Inventory) and Sulphide materials, based on its expected metallurgical behaviour to maximise the metallurgical recovery for each material type. (i.e. CIL vs Float feed). • Given that visually logged transitional material is separated based on the expected metallurgical behaviour, the material that is categorised as transitional material with oxide metallurgical performance will behave like oxide material when processed through the CIL Plant. As a result, the Transitional Ore Reserves with oxide metallurgical behaviour have been reported with the Oxide Ore Reserves. • The sulphide ore is scheduled to be processed in a new sulphide concentrator to produce a gold sulphide concentrate for export. The flotation tailings will be leached through the existing CIL circuit to produce doré. FS level test work to determine total gold recovery to concentrate and doré is expected to vary by deposit and average around 83%.
Environmental	• 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).

Infrastructure	• All equipment required for the mining and processing of the oxide and transitional Ore Reserve is in place and operational, and consist of the following:
	  ○ Dedicated light fuel oil diesel generators.
	  ○ Water supply
	  ○ Simberi Oxide Processing plant
	  ○ Surface roads and communications
	  ○ Plant maintenance workshop facilities
	  ○ Process plant buildings, administration offices, training rooms, assay laboratory, site security buildings, ablution and stores.
	  ○ Core shed.
	  ○ Mobile communication tower
	  ○ Accommodation and camp facilities
	  ○ Airstrip
	  ○ Wharf
	• For the processing of Sulphide ores the FEED study identified the following additional infrastructure, which 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

Costs	• All costs used in the generation of the Ore Reserves have been derived from first principles, actual performance and the Sulphide FEED Study. • Operating costs are estimated as part of the internal budgeting process and approved by the St Barbara board. • A gold price of US$1800/oz gold price, for Oxide and Transitional Ore Reserves and US$1500/oz for the Sulphide Ore Reserves. • Exchange rates were provided by the Corporate Finance team. • Costs associated with treatment and transport have been included in the cost modelling completed for the project based on actual performance and the Sulphide FEED Study. • Royalties have been included at the PNG government royalty of 2.0% of gold produced. A MRA levy is also applied to at 0.5% of gold produced.
Revenue Factors	• A gold price of US$1800/oz gold price, for Oxide and Transitional Ore Reserves and US$1500/oz for the Sulphide Ore Reserves has been used in the revenue calculations.

Criteria	Comments
Market Assessment	• Gold doré bars are transported by a dedicated service provider from gold room to final destination at the ABC Refinery in Sydney. Armoured vehicles are used from start to end of shipment process. Gold is sold on an $A basis with a call option of $US sales. • For Sulphide ore, gold bearing concentrate will be the saleable product for market. 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. The contracts are in place with four (4) traders. The concentrate is expected to be sold in the Asian market.
Economic	• The costs are based on historic actuals and estimated sulphide plant FEED study operating costs and the FY24 Simberi Budget. • Revenues are based on historic and feasibility study estimates. Gold prices are based on St Barbara's pricing forecast of US$1800/oz gold price, for Oxide/Transitional Ore Reserves and US$1500/oz for the Sulphide Ore Reserves. • The Ore Reserves financial model demonstrates the mine has a positive NPV. • The discount rate is appropriate for the location, type and style of operation.
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	• SGCL is operating on St Barbara's held mining lease with all required government and statutory permits and approvals are in place until the mining lease expires in December 2028. The current projected mine life for the Sulphide operation is 2034, 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 phase.
Classification	• The Ore Reserves classification is based on the JORC 2012 Code. 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 Probable Ore Reserves. • The Ore Reserves do not include any Inferred Mineral Resources (metal). • No portion of the Probable Ore Reserve has been derived from Inferred Mineral Resources. • The Competent Person believes the Ore Reserves declared are an accurate representation for the Simberi deposit.
Audits or reviews	• No audits or reviews have been conducted on the current Ore Reserve. • AMC undertook a peer review of the aspects of the mine planning undertaken for the Simberi Front End Engineering and Design Phase of the Simberi Sulphide Project (FEED Study) in 2022. The primary scope included dilution modelling, pit optimisation, mining cost review and strategic scheduling. • East Riding Mining Services was requested by St Barbara Limited to review the metallurgical aspects of St Barbara's Simberi Sulphide Gold Project FEED Study in 2022. Their scope of their review was: ○ The process design and comment on the appropriateness of the circuit to treat the ore. ○ Review the Design Criteria ○ Review the PFDs and P&IDs ○ Review the metallurgical test work and Recovery Models ○ Identify any threats and opportunities.
Discussion of relative accuracy/ confidence	• The accuracy of the Ore Reserve estimate is dependent upon the accuracy of the Mineral Resource model and the modifying factors used to support the reserves statement. • The modifying factors have been developed from current mine performance data and FEED Study estimates. In the opinion of the Competent Person the modifying factors are reasonable. • Changes have recently been made to the grade control modelling process to improve the reconciliation of the resource against actual performance. Recent reconciliation analysis has shown encouraging trends.

Beaver Dam Ore Reserves Estimate Summary

Feasibility Studies

The current Ore Reserve is based on the 2024 Pre- Feasibility Study completed in February 2024 by Ausenco Engineering and Moose Mountain Technical Service.

The Ore Reserves are based on whole-ore transporting the Beaver Dam ore to 15-Mile processing plant. Costs are based on metallurgical test work and cost estimates develop from first principles in the 2024 Pre-Feasibility study.

Classification Criteria

The basis for the classification is the Mineral Resources classification and economic cutoff grade.

The ex-pit material classified as Measured and Indicated Mineral Resources, with a grade above 0.5 g/t Au, is demonstrated to be economic to process and is classified as Proved and Probable Ore Reserves respectively.

Inferred Mineral Resources have been treated as waste rock in the mine plan, and no portion of the ore reserve has been derived from these materials.

Cut-off Grades

Breakeven cut-off grade (COG) is calculated using a USD $1500/oz gold price.

The COG estimate is based on a Net Smelter Price calculation that incorporates commodity price assumptions, foreign exchange rates, offsite transport and refining costs, estimated smelter payables, royalties, process recoveries; and operating costs associated with projected operating conditions.

Material above a 0.5 g/t Au grade contains enough value to pay for the associated operating costs to produce that value and is chosen as the COG for identifying material as ore versus waste. This material is then considered for inclusion in the Ore Reserves process.

Mining method and assumptions

The method for Ore Reserves estimation includes pit optimisation, final pit and phase designs, mine infrastructure designs, mine and mill production schedules, all identified modifying factors, capital and operating cost estimates for all aspects of the operation, and economic valuation.

Beaver Dam is planned as an open pit mining operation that is mining gold ore, transporting the ore off site for processing into doré bars. The mine is planned as a conventional open pit drill/blast/load/haul operation with surface drills, hydraulic excavators, rigid frame dump trucks and a fleet of ancillary mine equipment. A program of grade control drilling and sampling is also proposed in advance of mining to better identify ore and waste mining boundaries. This mining method is appropriate for the style and size of the mineralisation.

No Inferred Mineral Resources material has been included in optimisation and/or Ore Reserves reporting.

The pit optimisation for Beaver Dam is run using Pseudoflow on a mining block model based on the 2019 Mineral Resources block model, and the ultimate pit limit is based on a 0.71 revenue factor pit shell. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using this target optimisation shell.

The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 36 to 50 degrees in the various geotechnical zones.

Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.

The gold grade and tonnages in the Mineral Resource block model contain estimates of open pit mining loss and dilution, based on a 5 m selective mining unit size. Additional mining dilution and recovery factors have also been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for Beaver Dam. Global dilution and recovery factors applied to the Mineral Resource block model tonnages and grades are shown below:

Mining recovery: 98.4%

Dilution: 1.6% @ 0.3 g/t gold grade.

The mine and mill production schedules are developed using the bench Ore Reserves and waste tonnages within the phased Beaver Dam pit designs.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine, and simulated hauler cycle times for all planned Beaver Dam sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine as well as supplier recommendations. Costs inputs are based on supplier quotations in Q4 2023.

Processing method and assumptions

Ore from the Beaver Dam pit will be mined and transported to the St Barbara proposed 15-Mile Gold project 61km's East. The 15-Mile processing facility consists of a 3 stage crushing and ball mill comminution circuit. The process facility uses is conventional gravity concentration with an intensive leach reactor and a Carbon-in-leach (CIL) circuit with Pressure Zadra Elution. Tailings are treated through cyanide destruction and deposited in the proposed 15-Mile tailings facility. Tailings capacity will be provided by an additional tailings dam lift at 15-Mile.

Metallurgical performance of the Beaver Dam ore at the proposed 15-Mile process facility has been well studied since 2015. Beaver Dam has been proven to be amendable to gravity and CIL recovery with a grind product size of 150um with a Bond Ball Mill work index (BWi) of 15.3 kWh/t and an Axb of 42.4. Beaver Dam ore is free-milling with quick leach kinetics which has shown an average recovery of 95.8% with low cyanide consumption.

Approvals and Infrastructure

The Beaver Dam project assumes Provincial Approvals prior to development. The project is still subject to Federal permitting such as Fisheries Authorization, and Species at Risk.

The Beaver Dam project as proposed has taken into consideration environmental limitations and opportunities to reduce impacts. This has resulted in a decrease in environmental impacts compared to previous designs. This includes a smaller pit design, less mined waste, better management of potentially acid generating material, no requirement for a new haul road, minimized trucking frequency and reduced water consumption.

The project footprint has largely reduced as a result of the smaller pit design. This resulted in reduced waste rock stockpiles. The potential acid generating (PAG) material will be separated from the non-acid generating (NAG) material. The PAG will be re-handled back into the vacant pit rather compared to stockpiling long term on surface to help mitigate acid generation. Additionally, the project no longer requires the construction of a 12.3 km haul road to the Touquoy processing facility to reduce disturbance.

Site infrastructure including buildings, water treatment and auxiliary support equipment has been updated and estimated as per the 2024 Pre-Feasibility Study.

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

Criteria	Comments
Sampling Techniques	• 2005 – 2007: Core initially sampled with using a mechanical splitter over 1m intervals. Subsequently ½ core using a core saw. • 2009 – 2015: Sawn to half core over nominal 1m intervals
Drilling Techniques	• Drilling has used primarily NQ (47.6 mm diameter) core. • Core is not orientated
Drill Sample Recovery	• Diamond drilling recovery percentages were measured by comparing actual metres recovered per drill run versus metres measured on the core blocks. Recoveries averaged over >90% with increased core loss associated with faults, shear zones and proximal to underground workings. • There is no relationship between sample recovery and gold grade
Logging	• Drill core logging procedures are described on a metre-by-metre basis with regards to lithology, texture, sulphide mineralisation, alteration, quartz veining, structure, and in some cases magnetic susceptibility. All drill core has been photographed both wet and dry. Core recovery and rock quality designation (RQD) were measured for each hole at the same metre-by-metre intervals. • Information was initially captured using logging sheets; later programs used direct computer entry.
Sub-sampling techniques and sample preparation	• 2005 – 2009: ½ core samples were crushed, pulverised and sieved through a 150 mesh Tyler screen. The + 150µm fraction was analysed in its entirety by fire assay with a gravimetric finish. The- 105µm fraction was homogenised and two sub-samples were analysed by fire assay (25g) with AAS finish. The average of the two AAS results was weight averaged with the + 150µm assay to yield the average head grade of the sample. • 2014 – 2015: Entire holes sampled. Each sample was dried then weighed, with sample generally weighing in the order of 2.4kg, before jaw-crushing to nominally 70% passing 6mm. The entire sample was then pulverised to 85% passing 75 µm initially using a LM5 ringmill. Later in the program smaller capacity (1kg) bowls were used and the pulverised sample recombined before screen fire assay.
Quality of assay data and laboratory tests	• 2005-2009: Samples sieved with 150 mesh screen. Coarse fraction analysed in its entirely by fire assay with gravimetric finish. The- 105µm fraction was homogenised and two sub-samples were analysed by fire assay (25g) with AAS finish. The average of the two AAS results was weight averaged with the + 150µm assay to yield the average head grade of the sample. • QAQC for the 2005 - 2007 program was restricted to 1:20 insertion of blanks, with the source of blank material unknown. 89% of blanks were BLD. • For the 2009 program, blanks (massive anhydrite drill core) were inserted at a rate of 1:50. Assays were at or below limit of detection. SRMs were also inserted at 1:50 and indicate no issues. • 2014 – 2015: Samples identified as potentially mineralised were assayed via screen fire assay. The entire pulverised sample was screened using 106µm screen. Coarse fraction was fire assayed with a gravimetric finish. Two sub-samples were taken from the fine fraction and assayed using fire assay (50g) with an AAS finish. The results were averaged and then the head grade of the sample determined as a weighted average of the coarse and fine fractions. • QAQC for the 2014 and 2015 program included insertion of blanks and SRMs at a rate of 1:14. The use of “barren” Touquoy core presented problems as some of this material was likely mineralised.
Verification of sampling and assay	• Prior to 2016 data capture was completed manually on hard copy logs, which was transferred to Excel spreadsheets and then loaded to MS Access databases. The data was then validated and transferred to an SQL server database using DataShed software. • Since 2016 data has been captured electronically either using Excel spreadsheets or LogChief. • A selection of sample data has been cross-checked against logs from annual reports with no issues detected.
Location of data points	• Between 2005 and 2007, hole collars were surveyed using a theodolite. • In 2009, collars were surveyed using a Trimble differential GPS system. • In 2014, licenced surveyors from WSP Canada Inc, resurveyed the three control points established by Acadian and several hole collars. • Holes were down-hole surveyed using a FlexIT tool at 30m intervals.
Data spacing and distribution	• Data spacing is approximately on 25m spaced sections. Drilling data is sufficient to establish continuity for all lodes.
Orientation of data in relation to geological structure	• Mineralisation is sub-vertical. The inclined holes have not introduced any sampling bias.
Sample security	• Core was kept in a secure and locked area with limited access. Samples are typically conveyed from the Project site to the laboratory using commercial transport firms.
Audits or reviews	• No external audits or reviews of sampling techniques and data have been completed.

Section 2 Reporting of Exploration Results – Beaver Dam

Criteria	Comments
Mineral Tenement and Land Tenure Status	• Atlantic Mining NS Inc (AMNS) has 100% ownership of the tenements over Beaver Dam (EL50421). • The tenement is in good standing at the time of reporting.
Exploration Done by Other Parties	• No recent Mineral Resource drilling has been completed by AMNS. Work completed by other parties is covered in the previous section.
Geology	• Gold mineralization at Beaver Dam occurs in the rocks of the Meguma Terrane, consisting of a folded succession of Cambrian-Ordovician aged metasedimentary rocks. The Meguma Terrane sedimentary package is divided into two distinct formations: the Goldenville Group and the younger Halifax Group, both of which have been subject to greenschist to amphibolite grade regional metamorphism. The majority of the Meguma gold deposits are found within the Goldenville Group. • Gold at Beaver Dam occurs both within tabular, bedding-parallel and cross-cutting quartz veins, as well as within the argillite and greywacke host rocks. It is hosted within the overturned, southern limb, of the Touquoy-15-Mile Anticline, dipping to the North at approximately 60-65°. The mineralized zone zone is a tabular body which is up to 100 m wide in some areas, however the most prospective areas (>0.5 g/t) occur in zones 5-40m wide. Mineralization is associated with sulphides, including arsenopyrite, pyrite and pyrrhotite. Lesser chalcopyrite, galena, and sphalerite have been observed. The mineralized zone is bounded to the east and west by two northwest-southeast trending regional faults.
Drill Hole Information	• No exploration results are presented.
Data Aggregation Methods	• No exploration results are presented.
Relationship Between Mineralisation Widths and Intercept Lengths	• No exploration results are presented.
Diagrams	• No exploration results are presented
Balanced Reporting	• No exploration results are presented
Other Substantive Exploration Data	• No exploration results are presented
Further Work	• No further resource definition drilling is planned at this stage

Section 3 Estimation and Reporting of Mineral Resources – Beaver Dam

Criteria	Comments
Database integrity	• Internal data verification programs have included review of QA/QC data, re-sampling and sample re-analysis programs, and database verification for issues such as overlapping sample intervals, duplicate sample numbers, or lack of information for certain intervals. Validation checks are performed on data used to support estimation, and comprise checks on surveys, collar co-ordinates, lithology data, and assay data.
Site visits	• The Competent Person most recently visited site in September 2023.
Geological interpretation	• The approach to resource estimation described for Beaver Dam uses mineralized domains to report the grade properties of areas of mineralization where the statistical properties of the composites appear consistent in terms of their histogram and spatial continuity. The domains attempt to identify areas of consistent mineralization style based primarily on the statistical properties of the drill hole composite grades. • For the Beaver Dam resource model, a single mineralization domain has been used.
Dimensions	• strike extent = 1400m ; width = variable up to 100m, but better grade between 5m-40m; vertical extent = 225m
Estimation and modelling techniques	• Model completed in 2019. • Multiple indicator kriging (MIK) was used to estimate the Mineral Resources based on an anticipated approach to mill feed material selection in mining. The basic unit of estimation is a panel with horizontal dimensions equal to the average drill hole spacing (25m * 10m * 5m) • Samples were composited to 2 m intervals. Statistical properties of the composites were reviewed in terms of histogram and spatial continuity to identify areas of consistent mineralization style. • Directional sample variograms and variogram models were generated for the domains, and the resulting data

Criteria	Comments
	used to inform estimation search criteria. • The resource estimates assume mining ore selection will take place on 5m flitches with a minimum mining width of around 5 m. Following variance adjustment, the resultant block histograms were assumed to be log-normal in shape. The variance included an adjustment for the information effect introduced by grade control sampling. A grade control drill hole pattern of 5 m by 5 m with a downhole sampling interval of 2.5 m was assumed for Beaver Dam.
Moisture	• Tonnages are estimated on a dry basis.
Cut-off parameters	• The deposits are reported at a 0.3g/t cut-off. The cut-off grade includes the following considerations: • Gold Price US$1,800/oz; • Exchange rate of 0.77 US$:CAD$; • Process recovery of 92% • Mining cost CAD$2.90/t • Processing Cost CAD$18.01/t • General/Administration Cost CAD $2.50/t • Variable overall pit slope angles
Mining factors or assumptions	• The mining method is conventional open pit.
Metallurgical factors or assumptions	• Conventional gravity and carbon in leach cyanidation utilising the Touquoy/15-Mile processing equipment.
Environmental factors or assumptions	• The Beaver Dam project as proposed has taken into consideration environmental limitations and opportunities within the project area. Storage of site materials follows most environmentally responsible guidelines and every opportunity to mitigate disturbance has been considered. This has resulted in a decrease in environmental impacts compared to previous designs. • Project Footprint: The Beaver Dam footprint has decreased compared to previous designs largely due to a reduction is pit size and reduced mining rate. This resulted in a reduction of stockpile sizes and overall disturbance. The project no longer relies on the construction and environmental disturbance of a 12.3km haul road to Touquoy facility but rather leverages existing roads to 15-Mile. The design also reduces fresh water intake, administrative infrastructure and includes re-handling of potentially acid generating material back into the vacant pit to mitigate potential impacts. • It is assumed that Provincial approvals will be granted for Beaver Dam ahead of operations. • The project is still subject to Federal permitting approvals such as Fisheries Authorization and Species at Risk.
Bulk density	• A global bulk density of 2.73g/cm^3 was assumed
Classification	• The resource estimate for each panel was initially classified as Category 1, 2 or 3 based on the results of the data search in the panel neighbourhood: • Category 1: uses search radii (25m * 8m * 25m), and an octant search. If the data found in this search satisfy these criteria (at least 16 samples found in at least four octants), the panel is given a Category 1 flag. • Category 2: If the first search criteria are not satisfied, search radii (37.5m * 12m * 37.5m) are used with an octant search. If the data found in this search satisfy these criteria (at least 16 samples found in at least four octants), the panel is given a Category 2 flag. • Category 3: If the second search criteria are not satisfied, search radii (37.5m * 12m * 37.5m)) are used with an octant search. . If the data found in this search satisfy these criteria (at least 8 samples found in at least two octants). If these criteria are satisfied, a Category 3 flag is applied. If not, no estimate for the panel is generated. • In reporting the resource estimates, Category 1 panel estimates were assigned to Measured Mineral Resources, Category 2 to Indicated Mineral Resources and Category 3 to Inferred Mineral Resources.
Audits or reviews	• The resource model was reviewed internally.
Discussion of relative accuracy/confidence	• The resource estimates are global estimates. Grade control drilling will be completed in advance of mining to improve local estimates of grade.

Section 4 Estimation and Reporting of Ore Reserves – Beaver Dam

Criteria	Comments
Mineral Resource Estimate for Conversion to Ore Reserves	• The Ore Reserves estimate is based on the Mineral Resources estimates carried out by Neil Schofield of FSSI Consulting (Australia) Pty Ltd in 2019. Gold grade was estimated using multiple indicator kriging (MIK). • The Mineral Resources are reported inclusive of the Ore Reserves.
Site Visits	• The Competent Person most recently visited site in October 2023
Study Status	• Beaver Dam is at Pre-Feasibility stage following the completion of the February 2024 study
Cut-off Parameters	• Cut-off grade assumes: • US$1,500/oz gold at a currency exchange rate of 0.78 C$ per US$ • 99.9% payable gold • $2.13/oz offsite costs (refining and transport) • 1.6% royalty • 94% metallurgical recovery at cutoff • Processing costs of $25.85/t (inclusive of $13.96/t ore transport costs to processing facilities) • General and administrative (G&A) costs of $5.03/t. • A breakeven incremental cut-off grade of 0.50 g/t Au is used for reporting.
Mining Factors or Assumptions	• Lerchs-Grossman (L-G) analysis, pit designs, and mine production scheduling have been completed to enable the conversion of Measured and Indicated Mineral Resources to Proved and Probable Ore Reserves. Inferred Mineral Resources are set to waste. • The project will be mined with conventional drill, blast, load and haul setup. Primary production equipment includes 4.5 m^3 bucket production excavators and 64 tonne payload off highway mining trucks. • The overall slopes used for the pit optimisation and design work were sourced from reports carried out by independent geotechnical consultants and range from 36 to 50 degrees in various geotechnical zones. • Grade control drilling will be carried out in advance of mining and the information obtained from this drilling will be made available for decision making in advance of mining. • Mining recovery of 98.4% and external mining dilution of 1.6% at 0.30 g/t Au grade is applied in addition to the modelled in-block dilution.
Metallurgical Factors or Assumptions	• Metallurgical performance is based on the Beaver Dam ore being processed at the proposed 15-Mile process facility. • Metallurgical testing confirmed the Beaver Dam ore is free-milling and highly amendable to conventional recovery methods of gravity and carbon in leach cyanidation. • The process review undertaken by Ausenco confirmed the 15-Mile processing equipment is suitable for recovering gold from Beaver Dam ore. The process flowsheet for 15-Mile has been designed to maximize repurposing of Touquoy equipment at 15-Mile and reduce initial capital costs. The Beaver Dam ore is planned to be blended with the 15-Mile ore at the 15-Mile processing facility. • Previously completed test work indicates the ore is medium hardness with bond work index approximately 15.3 kWh/t and a final product size of 150um achieving a overall average recovery of 95.8%.
Environmental	• The Beaver Dam project as proposed has taken into consideration environmental limitations and opportunities within the project area. Storage of site materials follows most environmentally responsible guidelines and every opportunity to mitigate disturbance has been considered. This has resulted in a decrease in environmental impacts compared to previous designs. • Project Footprint: The Beaver Dam footprint has decreased compared to previous designs largely due to a reduction is pit size and reduced mining rate. This resulted in a reduction of stockpile sizes and overall disturbance. The project no longer relies on the construction and environmental disturbance of a new 12.3km haul road to Touquoy facility but rather leverages existing roads to 15-Mile. The design also reduces fresh water intake, administrative infrastructure and includes re-handling of potentially acid generating material back into the vacant pit to mitigate potential impacts. • It is assumed that Provincial approvals will be granted for Beaver Dam ahead of operations. • The project is still subject to Federal permitting approvals such as Fisheries Authorization and Species at Risk.
Infrastructure	• Site infrastructure including buildings, water treatment and auxiliary support equipment has been updated and estimated as per the 2024 Pre-Feasibility Study.
Costs	• Capital and sustaining costs were compiled by Ausenco from the following sources: ○ Mining initial capital costs were developed by Moose Mountain Technical Services (MMTS). Costs include the owner's mine fleet, which utilizes fleet purchased for the nearby 15-Mile project; open pit, stockpile, haul road development costs and mine operations infrastructure required for Beaver Dam. ○ Mining sustaining capital costs were developed by MMTS and include mine fleet replacement units and ongoing pit and stockpile expansion development. ○ Infrastructure, project delivery, project indirects and contingency were developed by Ausenco. This includes power, buildings and tailings. Beaver Dam leverages the proposed 15-Mile project for

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	processing but includes an additional tailings lift to the 15-Mile facility to accommodate Beaver Dam ore. • Operating costs have been compiled based on the following sources and assumptions: o Mining unit costs have been estimated by MMTS, built up from first principles, and utilizing 2023 vendor quotes and include consumption of fuels, lubes, tires, undercarriage, GET, running parts, major component replacements, operating and maintenance labour and overheads for management and technical serves including ore grade control. o Transportation costs were developed by MMTS, assuming a contractor run operation, which include fleet purchase, lease payments, fuel consumption, maintenance, distance/cycle times, admin, labour and profit. o Processing unit costs have been estimated by Ausenco using firs principles and 2023 prices for major reagents and steel media. Process costs are based on the Beaver Dam ore being processed at the proposed 15-Mile project. o G&A costs are based on The Atlantic Operations Touquoy project. •
Revenue Factors	• A gold price of US$1500/oz has been used in revenue calculations based on guidance provided by the company's Mineral Resources and Ore Reserves Steering Committee.
Market Assessment	• A contract was entered into for the transportation, security, insurance, and refining of doré gold bars from Touquoy. It is expected that doré produced from Beaver Dam would be subject to similar contracts to that in place for Touquoy.
Economic	• The Ore Reserve estimate is based on a Pre-feasibility Study level of accuracy with inputs from open-pit, processing, transportation, sustaining capital and contingencies scheduled and costed to generate the initial Ore Reserve cost model. • A sensitivity analysis was completed on the base-case after-tax NPV(5%) using the following variables: o Gold Price o Initial Capital Expenditure o Total Operating Cost o US$:C$ exchange rate • The sensitivity analysis demonstrates the project is financially robust and therefore economic extraction of the deposit can be reasonably justified.
Social	• In addition to applicable regulations, the Beaver Dam project will require social acceptance. Early information and consultation meetings have been held with local communities, First Nations communities, local, provincial, and federal governmental authorities to initiate collaborative work to obtain social acceptability of the project. • The project will be subject to the regulations under the Nova Scotia Environmental Assessment Act and environmental baseline studies are well advanced which will support the initiation of the environmental impact studies.
Other	• AMNS has not identified any material naturally occurring risks. • The company is committed to early engagement with all relevant stakeholders.
Classification	• The economically minable component of the Measured Mineral Resource has been classified as a Proved Ore Reserve. • The economically minable component of the Indicated Mineral Resource has been classified as a Probable Ore Reserve.
Audits or reviews	• No audits or reviews of Ore Reserves have been completed.
Discussion of relative accuracy/ confidence	• The Ore Reserves are based on global estimates of Mineral Resources. Grade control drilling will be completed in advance of mining to improve local estimates of grade.