

SUMATRA COPPER & GOLD PLC

Registered No. 5777015

# **QUARTERLY REPORT: MARCH 2018**

Sumatra Copper & Gold plc

("the Company") ASX Code: SUM

# Capital structure

At 30.03.2018 3,796,225,969 listed CDIs

#### Market capitalisation

At 27.04.2018 CDI price: A\$0.015 Market capitalisation: A \$ 80 m

#### Cash & bullion, debt

At 31.03.2018 Cash and bullion: US\$3.7m Loan facilities: US\$ 36.4 m Zero Interest Bond: US\$3m Working capital facility: US\$5.7m

## **Board of Directors**

Chairman Jocelyn Waller Executive Director Adi Sjoekri Non-Executive Directors Gavin Caudle Andy Robb David Fowler

## **Registered Office**

39 Parkside, Cambridge United Kingdom CB1 1PN

Amberley Business Centre Level 3, 1060 Hay Street West Perth WA 6005 T: +61 8 9480 0620 E: info@scgplc.com

# Highlights

The Company is pleased to present its March 2018 quarterly activities report for the Tembang Gold-Silver Project, located in southern Sumatra, Indonesia ("Tembang").

## Production

- Gold production for the quarter of 11,309 oz and silver production of 53,408 oz (total of 11,981 AuEq\* oz).
- All-in sustaining cost (AISC) of US\$ 862/oz.
- Significant savings of Power costs (26c/Kwh to 8.2c Kwh) with binding agreement with connection to grid with PLN
- Gold recovery of 93.9% and silver recovery of 79.6%.
- Finished product stocks of 688 oz gold and 3,155 oz silver at quarter end.
- Increasing production from Belinau underground mine in coming quarters following ramp-up in stoping.

#### Sales

- Gold sales of 11,863 oz and silver sales of 60,122 oz.
- Gold and silver revenue of US\$15.73 million and US\$0.99 million respectively for total revenue of US\$16.72 million.
- Average realised sales price for gold of US\$1,325.83/oz and silver of US\$16.46/oz.

# Safety

- Site achieved over one year LTI free and over 2,000,000 man hours without an LTI on 3 January 2018.
- One Lost Time Injury (LTI) occurred on 8 January when an underground Jumbo assistant sustained a finger injury.
- At quarter-end, the site had achieved a total of 82 LTI free days or 517,312 man hours without LTI.

## Financial

- Cash & cash equivalents at 31 March 2018 of US\$0.4 million and bullion of US\$3.3 million.
- US\$1.4 million senior secured loan repayment.
- The Company is now unhedged

## Exploration

- Exploration activities remained focussed on advancing priority targets in the Tembang Exploration Target Pipeline.
- Drilling of near mine targets under the Merdeka strategic alliance underway.
- \* AuEq = Gold Equivalent Ounces, calculated as oz Au + oz Ag / 74.3

# Summary

Table 1: Tembang Operations – Key Production Statis
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Tembang Operations	Unit	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018
Underground mining						
Ore mined	tonnes	15,942	16,050	12,428	31,899	36,100
Mined availa	g/t Au	5.96	7.17	6.91	6.19	5.82
wined grade	g/t Ag	72.34	45.71	63.71	25.86	32.64
Contained motol	oz Au	3,054	3,700	2,761	6,352	6,754
Contained metai	oz Ag	37,078	23,587	25,457	26,523	37,882
Open pit mining						
Ore mined	tonnes	43,797	34,858	38,973	61,459	100,836
Minod grade	g/t Au	1.81	2.44	2.73	1.81	1.68
wined grade	g/t Ag	19.80	15.86	17.55	14.60	15.32
Contained motol	oz Au	2,553	2,738	3,415	3,577	5,449
Contained metai	oz Ag	27,874	17,777	21,987	28,847	49,652
Mill production						
Ore milled	dmt	54,558	53,060	52,187	96,687	115,153
Mill grade	g/t Au	3.15	3.79	3.53	3.25	3.25
	g/t Ag	36.09	21.74	19.21	17.07	18.13
Contained metal	oz Au	5,524	6,466	5,930	10,114	12,043
	oz Ag	63,306	37,095	32,232	53,076	67,105
Decovery	% Au	93.40	94.40	95.57	94.40	93.88
Recovery	% Ag	79.86	81.47	87.20	84.05	79.59
Recovered gold	oz Au	5,159	6,104	5,667	9,548	11,306
Recovered silver	oz Ag	50,555	30,220	28,107	44,609	53,408
Gold & silver sales						
Gold sold	oz Au	4,533	5,208	3,054	8,422	11,863
Silver sold	oz Ag	58,164	36,973	14,146	19,290	60,122
Inventory at end of quarter						
Ore stocks	oz Au	250	-	120	307	210
	oz Ag	1,337	-	541	3,128	4,767
Metal in circuit	oz Au	556	588	928	880	748
	oz Ag	4,708	3,938	4,483	3,922	3,223
Finished product	oz Au	331	1,094	247	512	668
	oz Ag	2,006	5,448	1,521	2,290	3,155



# **Quarterly Production Data**



#### Figures 1–4: Key Quarterly Production Data



AuEq conversion is based upon the relative gold/silver price for the respective quarter: 69, 72, 74, 76 and 74 for March 17, June 17, Sept17, Dec 17, Mar 18, pquarters respectively

# All-in Sustaining Cost (AISC)

#### Table 2: Tembang Operations – All-in Sustaining Cost (AISC)

Tembang	Unit	MarQtr 2018	YTD 2018	Unit	MarQtr 2018	YTD 2018
Mining costs	US\$m	4,738	4,738	US\$/oz	419.06	419.06
Processing costs	US\$m	2,770	2,770	US\$/oz	245.00	245.00
General & admin costs	US\$m	1,494	1,494	US\$/oz	132.14	132.14
Technical services	US\$m	782	782	US\$/oz	69.17	69.17
Silver credits	US\$m	(990)	(990)	US\$/oz	(87.56)	(87.56)
Inventory movements	US\$m	(653)	(653)	US\$/oz	(57.76)	(57.76)
Cash Costs	US\$m	8,141	8,141	US\$/oz	720.05	720.05
Royalties	US\$m	624	624	US\$/oz	55.19	55.19
Capital works (sustaining)	US\$m	985	985	US\$/oz	87.08	87.08
AISC	US\$m	9,750	9,750	US\$/oz	862.32	862.32
Recovered Gold	oz Au	11,306	11,306			



# **Tembang Operations**

## **Underground Mining**

#### **Development & Stoping**

Ore production from underground mining operations at Belinau was steady throughout the quarter, with the shrink stope mining method working effectively and providing a consistent ore supply. The majority of primary stopes in the main stoping block are now mined out and backfilled, with stoping continuing in the secondary stopes and the eastern and western extents of the orebody.

Ore drive mining along Levels 10 and 11 is mostly completed (pending any extension of the orebody to the east and west) and bench cut and fill (BCF) mining well underway on both levels.

The decline advanced steadily throughout quarter, along with the associated infrastructure development (return airway, escapeways, stockpiles etc), with no significant interruptions experienced. At the end of the quarter, the decline was just below Level 12, and Level 12 access was developing towards the orebody. Ore mining on Level 12 is expected to commence in early April.

Major underground infrastructure works were delayed due to the delay in delivery of ventilation and electrical equipment, however an electrical upgrade (which will provide more power for underground) and the installation of the new 90kW primary ventilation fan are both scheduled for April.



Figure 5. Backfilled ore drive

# **Open Pit Mining**

Open pit mining progress at Berenai was lower during the quarter as the pit floor advanced below the ground water level. This water combined with high seasonal rainfall resulted in additional mud that had to be removed following each blast. The pit progressed from 102.5mRL down to 85mRL during the quarter. As the pit floor narrowed, the stripping ratio was significantly reduced.

Mining in the Asmar pit recommenced in January 2018, and will be the main open pit ore supply for the next 18-24 months. Initial mined grades from Asmar were low, however grades are improving as the pit deepens. There will also be a substantial amount of sub-economic material (<1.5g/t AuEq) mined from



Asmar, which is currently not viable to haul to the processing plant. This material will be stockpiled separately near Asmar. However with the reduced operating costs expected from the PLN power line (see separate note on PLN), a significant portion of this material will become economic and can add to mine life.



Figure 6. Asmar pit progress at quarter end

# **Mine Geology**

#### Ore Mining

Ore mining during the quarter was concentrated on the Berenai open pit and Belinau underground mines, with 60,950 tonnes of ore (3,980 oz Au) being mined from Berenai and 36,100 tonnes of ore (6,750 oz Au) being mined from Belinau. Mining operations began at Asmar in January with 40,700 tonnes of ore mined at a grade of 1.1 g/t Au (1,400 oz Au).

Ore from the Berenai open pit came from the main Berenai lode as well as the Central zone, a SWstriking connecting structure between the SE-trending Berenai main lode and the sub-parallel Nuri lode to the east. Ore from Belinau underground was sourced from the main WSW-striking lode from a variety of faces including ore drives, benching and trenching, and shrink stoping.

#### **Mine Reconciliation**

The reconciliation for Belinau Underground was 6% negative on gold metal and 22% positive on silver metal when comparing the grade control model to the current 2017 Mineral Resource model. There was a 4% relative loss in ore tonnes.

The Berenai open pit reconciliation for the quarter reported a 23% decrease in gold metal and a 30% increase in silver metal when comparing the grade control model to the 2017 Mineral Resource model. This was offset by a 17% increase in ore tonnes relative to the resource model accompanied by a 34% decrease in gold grade and an 11% increase in silver grade. This large variance is contained to the bottom of the pit. This pit is scheduled to be completed mid June Quarter and will have a moderate impact on the coming quarters production.

Reconciliation of quarterly data for crusher feed and mill output shows a less than 1% variance of ore tonnage estimation, while there is a 4% under-call on gold grade and 2% over-call on silver grade which implies grade control procedures were adequate.

#### **Geological Review**

A significant amount of drilling information has been located that is not included in the current exploration drilling database. Of particular interest are the quartz vein abundance logs and structural measurement data from drilling programs from the previous project owner (BTM), QAQC data including repeat and resplit samples for CRA and BTM drilling programs, as well as the original lithological codes from both CRA and BTM programs.

These data will be incorporated into the exploration database to enable more informed geological modelling of the prospects tested. It is anticipated that the quartz vein abundance and structural measurements will greatly assist in determining a best fit for drilling data to surface mapping for the Asmar pit.

# Processing

Total mill feed for the quarter was 115,153 tonnes, which contained 12,043 oz of gold and 67,105 oz of silver. Mill feed was higher than the target of 112,409 tonnes due to the higher SAG mill throughput of 65.7 tph compared to the target 56.1 tph. The ore blend was 16.2% Asmar, 54.5% Berenai, 29.3% Belinau. The gold grade during the quarter was 3.25 g/t and 18.1 g/t for silver compared to the target of 4.27 g/t for gold and 16.0 g/t for silver.

Gold recovery averaged 93.9% and 79.6% for silver. The recovery was higher compared to the target of 91.0% for gold and 79.4%. During March, when Asmar ore comprised 36% of feed to the mill, the gold and silver recovery reduced in accordance with expectations. The mostly low grade Asmar ore was more viscous and acidic, decreasing recovery and increasing reagent consumption. To optimise circuit performance, testwork was conducted to reduce the viscosity and increase recovery.

Recovered product for the quarter was 11,306 oz of gold and 53,408 oz silver compared to the target of 14,044 oz of gold and 45,878 oz of silver.

Mill availability at 91.3% and was affected by a SAG mill reline and load cell replacement. Mill utilisation was 88.9%.

Run-of-mine stocks at the end of the quarter were 4,705 tonnes at an average grade of 1.39 g/t Au and 32.37 g/t Ag for total contained 210 oz Au and 4897 oz Ag. Metal in circuit stocks at the end of the quarter totalled 748 oz Au and 4,767 oz Ag.

# Site Administration

Site administration was further improved following the successful recruitment of key finance and supply chain staff.



# **PLN Electricity Supply.**

Post reporting date, the company entered into a binding Agreement with PLN, the State run electricity supplier to build a 11kV powerline to the Tembang Site. The savings to the company are significant. The project currently uses an onsite power station, where the principal largest cost is the diesel. The price will reduce from current 26c / Kwh to 8.2c / Kwh. The Capital cost required is largely built into the supply cost, and the company needs to purchase new transformer and switch gear. The total outlay is ~500k USD. The Power line should be completed and operational by late August Quarter 2018.

# Health & Safety

Site achieved a 1-year Lost Time Injury (LTI) free milestone and over 2,000,000 man hours without an LTI on 3 January.

There were 90 recorded incidents for the quarter, consisting of 1 LTI, 1 MTI, 12 first aid injury (FAI), 14 property damage, 22 production loss, 4 environmental, 19 security, 10 near miss and 7 community.

A summary of the more significant LTI's and MTI's are listed below:

- 08 January 2018 LTI (6 days lost time): Underground mine Jumbo assistant sustained a mechanical pinch injury and broken finger bone on the tip of the left middle finger.
- 12 March 2018 MTI: Underground mine bogger operator suffered a laceration on right lower arm requiring two stitches, when hit by a rock while scaling.

The site at the end of the quarter had achieved a total of 82 LTI free days or 517,312 man hours without a LTI. The 12 month rolling average frequency rates at quarter end are LTIFR 0.47, RWIFR 0.94, MTIFR 1.41 and TRIFR 2.82. Although site recorded a LTI and MTI during the quarter, all of the 12-month rolling average frequency rates have decreased since the end of 2017.

The Company's main focus continues on improving safety systems and management to increase awareness, improve safety behaviour and reduce the number of incidents. Improvement continue to be made in emergency response readiness with training by an external provider during February and March, consisting of refresher training for 20 members and basic training of 10 new members.

## Environment

There were no significant known breaches of PT DNS's licence conditions or of the relevant Acts and Regulation, or reportable incidents. The operation has had no prosecutions or fines from the regulatory authorities. No high or critical environmental incidents occurred that could have medium to long-term impacts.

There were four minor environmental incidents during the quarter as summarised below:

- 1 January 2018 Tailing discharge line to TSF1, leak on weld joint.
- 5 January 2018 Tailing discharge line leaking at the butterfly valve flange adjacent to TSF1.
- 27 January 2018 Survey vehicle leak in fuel tank hose causing spill at Kotamas fuel station.
- 28 February 2018 Fuel spill when refuelling water pump in Berenai pit due to leaking pipes between service truck and pump.

The total site average rainfall year to date is 954 mm. The rainfall received is slightly higher than the site's 10-year total average for the same period of 933 mm.



## **Land Access**

Total land compensated at 31 March 2018 is 429.37 ha, 87.4 % of the total target area of 491.24 ha.

## Security

There were no security issues reported at the site during the quarter. The transition to a new security provider is ongoing.

# **Operating and Development Outlook**

Production guidance for 2018 is unchanged at between 45,000 - 55,000 oz AuEq.

# **Exploration**

Exploration activities during the March quarter were focused on drill testing of the depth extensions to the near mine mineralised structures under the Merdeka Copper Gold (Merdeka) strategic alliance. Wide-spaced drilling is ongoing at Buluh, and will move to Berenai and Belinau during the June quarter. Drilling proposals were prepared for Belinau SW, Asmar North, Anang East, Merin and Adit targets. Target locations and priorities are shown on Figures 7 and 8.



Figure 7. Tembang Exploration Target Pipeline





*Figure 8. Tembang Exploration Target Pipeline – target locations relative to resource areas* 

## **Resource Development Drilling**

No infill resource drilling was completed during the March quarter.

## Merdeka Strategic Alliance Drilling

Near mine drilling under the Merdeka strategic alliance commenced in February 2018. The current program comprises 4 drillholes at Buluh north and south, 4 drillholes at Berenai and 2 drillholes at Belinau. There are a further 9 drillholes planned at Belinau awaiting approval.

#### Buluh

Three drillholes (EJV001, EJV003 and EJV004) at Buluh have been completed with drillhole EJV002 nearing completion. To date, a total of 1,085m of diamond core has been drilled into the southern and northern extensions of Buluh to determine the downward continuation of the host structure. The holes have been drilled on two sections with two drillholes on each section line. The sections are spaced 280m apart.

Figure 9 shows the location of the current 4 drillholes overlain on significant intersections (>1 g/t Au) from previous exploration programs. Figures 10 and 11 are sections of the geological logging and sampling of the drillholes (note hole EJV002 on Figure 10 is not yet completed).





Figure 9: Plan of Buluh drilling program (blue) showing surface traces of veins (red polylines and polygons) and significant intersections (red circles)



Figure 10: Preliminary section interpretation of RDD18538 (EJV001) and RDD18541 (EJV002). Black hatching is sampled interval





Figure 11: Preliminary section interpretation of RDD18539 (EJV003) and RDD18540 (EJV004). Black hatching is sampled interval

# **Target Delineation**

#### Pusan Bawah

A grid based soil sampling and ground magnetic survey was completed in October 2017 with 104 soil samples collected. Multi-element assays result were received during the quarter, which outlined a weak soil geochemical signature for potential bedrock mineralisation. The gold results returned a maximum value of 42 ppb and mean value of 4.3 ppb. The multi-element geochemical analysis was inconclusive as shown in Figure 12. The ground magnetic survey results showed no supporting pattern to soil geochemical result.





Figure 12: Soil geochemical results for Au, Ag, As and Mo.

### **Grassroots Exploration**

A Tembang Rock Atlas library was launched in September 2017 by collecting representative hand specimens from all prospects within the Tembang project area. A total of 224 rock hand specimens have been collected to date.

#### Finance

## **Cash and cash equivalents**

Cash and cash equivalents at 31 March 2018 were US\$0.4 million with bullion on hand at the end of the quarter with a value of US\$3.3 million.

## Gold Sales and Hedging

A total of 11,863 oz of gold and 60,122 oz of silver were sold at an average price of US\$1,325.83/oz and US\$16.46/oz respectively for total revenue of US\$16.7 million as summarised in Table 3.

#### Table 3: Gold Sales for March 2018 Quarter

Sales	Gold sold (Au)			Silver sold (Ag)			Total
	oz Au	US\$/oz	US\$m	oz Ag	US\$/oz	US\$m	US\$m
Total sales	11,863	1,325.83	15.73	60,122	16.46	0.99	16.72

There were no new gold or silver hedges entered into during the quarter. The Company is currently unhedged.

## Senior Secued Debt Facility

During March, the Company repaid US\$1.4 million in Senior Secured loans US\$0.6 million was repaid in outstanding hedge obligations. The balance of outstanding hedge obligations is US\$ .6 m

## Merdeka Strategic Alliance

On 18 September 2017, the Company announced that it had formed a Strategic Alliance with Indonesian gold producer Merdeka Copper Gold Tbk ("Merdeka"), whereby Merdeka will fund ongoing exploration to extend mine life and target production increases. Under the alliance, Merdeka will initially invest US\$1.5 million over the following 6 months. The Company will in turn issue CDI's to Merdeka at a price representing the 5 trading day VWAP prior to the signing of a formal agreement detailing the specifics of the agreed exploration program. The CDI's will be issued to Merdeka in tranches based on the exploration spend by Merdeka during each 3 month period (quarter) and within 1 month of quarter end, with the first quarter concluding on 31 March 2018

Ultimately Merdeka intends to invest in stages for up to US\$10.0 million under similar terms for each successive approved exploration program, subject to ongoing exploration success and appropriate corporate approvals. Further details on the priority exploration targets are outlined in the Company's ASX release of 18 September 2017.



#### **Capital Structure**

The Company issued 165,000,000 CDIs during the quarter pursuant to the Controlled Placement Agreement ("CPA") with Acuity Capital as announced on 31 January 2018. The CPA provides the Company with up to A\$3 million of standby equity capital over a 29 month period. A further 1,764,706 CDIs at A\$0.017 per CDI were issued during the quarter in settlement of the costs incurred by Acuity Capital in relation to the set up of the CPA.

108,579,256 Performance Rights were issued during the quarter to employees under the Company's Incentive Plan approved by shareholders at the AGM held on 29 May 2015.

#### Table 4: CDI capital structure at 31 March 2018

CDI Holder	No. of CDIs	%
PROVIDENT MINERALS PTE LTD	1,527,930,663	40.25
PT SARATOGA INVESTAMA SEDAYA	1,380,705,967	36.37
CITICORP NOMINEES PTY LIMITED	242,623,893	6.39
NOKOTA CAPITAL MASTER FUND LP	182,958,163	4.82
ACUITY CAPITAL INVESTMENT MANAGEMENT PTY LTD <acuity< td=""><td>166 764 706</td><td>1 30</td></acuity<>	166 764 706	1 30
CAPITAL HOLDINGS A/C>	100,704,700	4.59
HSBC CUSTODY NOMINEES (AUSTRALIA) LIMITED	48,373,730	1.27
GOLDSTAR MINING ASIA RESOURCES (L) BHD\	44,356,656	1.17
YAW CHEE SIEW	24,972,309	0.66
MRS JULIETTE M BUCHANAN	22,298,732	0.59
BNP PARIBAS NOMS PTY LTD <uob drp="" hian="" kay="" ltd="" priv=""></uob>	7,323,783	0.19
Total Top 10 CDI Holders	3,648,308,602	96.10
Others	147,917,367	3.90
Total CDI's on issue	3,796,225,969	100.00



# **Tenement Status (March 2018)**

Category	Details		
Company:	PT Bengkulu Utara Gold		
	70.00% SUM Singapore (Tandai) Pte Ltd		
Ownership:	27.75% Sumatra Copper & Gold plc		
	2.25% PT Nusa Palapa Minerals		
Type of Permit:	Mining Business Permit – IUP for Exploration		
Dennik Marshar	Decree of the Chairman of Indonesia Investment Board (BKPM)		
Permit Number:	No. 5 / 1 / IUP / PMA / 2016		
Total Area:	14,044 Ha		
	Sub-district: Napal Putih, Padang Jaya, and Arga Makmur		
Location:	Regency : Bengkulu Utara		
	Province : Bengkulu		
Date Issued:	23 March 2016		
Permit Period:	8 years to 21 December 2017		

Note: PT BUG has received an approval for temporary suspension of its IUP Exploration Permit from the Directorate General of Mineral and Coal, letter No.1943/30/DJB/2017 dated 28 September 2017. This allows the permit in a suspension period until 31 August 2018. The suspension is given to conduct desktop preparation of a permitting upgrade to IUP Operation and Production.

Category	Details		
Company:	PT Dwinad Nusa Sejahtera		
Ownership:	99.95% Sumatra Copper & Gold 00.05% Adi Adriansyah Sjoekri		
Type of Permit:	Mining Business Permit – IUP for Operation Production		
Permit Number:	Decree of Musi Rawas Regent Nr. 263/KPTS/DISTAMBEN/2012		
Total Area:	9,979 Ha		
Location:	Village:Suka MenangSub-district:Karang JayaRegency:Musi Rawas (Now is Musi Rawas Utara)Province:Sumatera Selatan		
Date Issued:	04 April 2012		
Permit Period:	20 years to 03 April 2032		



Category	Details		
Company:	PT Musi Rawas Gold		
Ownership:	92.50% Sumatra Copper & Gold 07.50% PT Nusa Palapa Minerals		
Type of Permit:	Mining Business Permit – IUP for Exploration		
Permit Number:	Decree of Musi Rawas Regent Nr. 657/KPTS/DISTAMBEN/2012		
Total Area:	9,848 Ha		
Location:	Sub-district:Karang JayaRegency :Musi Rawas (Now is Musi Rawas Utara)Province :Sumatera Selatan		
Date Issued:	28 December 2012		
Permit Period:	5 years to 27 December 2017		

Note : PT Musi Rawas Gold is in process of requesting a temporary suspension on its IUP permitting to allow further time in justifying an upgrade to Operation and Production IUP Permitting.

#### Tenure relinquished during the quarter

There was no tenure relinquished during the quarter.

#### For further information please contact:

Rob Gregory	Phil Retter
CEO	Investor Relations
Sumatra Copper & Gold plc	NWR Communications
+61 8 9480 0620	+61 407 440 882
rgregory@scgplc.com	phil@nwrcommunications.com.au

#### About Sumatra Copper & Gold plc

Sumatra Copper & Gold plc (ASX: SUM) is a gold and silver producer and precious metals explorer in southern Sumatra, Indonesia. The Company's flagship asset is its Tembang gold-silver mine, currently in production. The Company also has an extensive exploration portfolio with projects ranging from brownfield, near-production opportunities to strategically located greenfield holdings.

#### **Competent Person's Statement – Exploration Results**

The information in this report that relates to exploration results is based on information compiled by Mr Brian New, who is a full time employee to the Company and a Member of the Australian Institute of Mining and Metallurgy. Mr New has sufficient experience, which is 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'. Mr New consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.



# Appendix 1

### JORC Code, 2012 Edition

#### JORC TABLE 1: THE INFORMATION IN THIS TABLE REFERS TO THE FOLLOWING PROJECTS: BERENAI AND BELINAU

Section 1: Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	<ul> <li>Diamond (DH) core and reverse circulation (RC) chips samples are the two main sample types for Berenai.</li> <li>Diamond (DH) core; reverse circulation (RC) chips and Underground face channel samples are the three main sample types for Belinau.</li> </ul>
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	<ul> <li>Drilling is typically completed along 25m spaced, regular sections at 25-50m drill hole spacing to ensure that the deposits have representative samples collected.</li> <li>Underground face channel samples are taken every cut (+/- 3meters), the underground samples were taken at right angles to mineralisation (i.e. horizontal face channel samples) and the location, thickness and tenor outlined is representative of the mineralisation.</li> </ul>
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	<ul> <li>The diamond drill core is sampled on selective, regular intervals based on observed geological parameters.</li> <li>RC chip samples were taken at one metre intervals across the mineralised zones. The samples were split to produce a 3kg subsample that was pulverised to produce a 30 g charge for fire assay. Historic RC sampling practices prior to DNS (PT Dwinad Nusa Sejahtera) are assumed to have been collected using standard industry practice for the time.</li> <li>Underground face channel samples are taken every cut (+/- 3meters). The underground face channel samples are 3 – 5kg taken at right angles to mineralisation.</li> </ul>



Criteria	JORC Code explanation	Commentary
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>PQ/PQ3/HQ/HQ3 sized diamond drill core is used.</li> <li>Standard wireline triple-tube (split sets) are used.</li> <li>Core is oriented wherever possible using the spear technique.</li> <li>Most of the holes were angled grid west on the main vein, except where steep topography did not allow this, to get close to true thickness intersections of the quartz veining.</li> <li>RC drilling for infill and grade control has been used in Berenai.</li> </ul>
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples.	<ul> <li>A geotechnician is present at each drill rig on a 24hr /7 day basis.</li> <li>The geotechnician records recovery and RQD at the drill rig before core is moved.</li> <li>All core is laid out at the rig in ½ PVC pipe for inspection.</li> <li>The driller marks zones of core loss with wooden block.</li> <li>Recovered core is measured and compared to each drilling interval.</li> <li>RC sample recovery is recorded by weighing the complete sample recovered and comparing this to the theoretical volume from the hole multiplied by the estimated bulk density. No RC recovery data is recorded prior to DNS.</li> <li>HQ3 triple tube (split sets) are used to maximize core recovery.</li> <li>Drillers are informed prior to start of hole where zones of interest are expected.</li> <li>Once the quartz vein lodes are intersected, drillers use short (1.5m) core runs to maximise recovery.</li> </ul>
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	<ul> <li>No consistent relationship between grade and core recovery and therefore no evidence that indicates a systematic sample bias.</li> <li>Sample recoveries on historic RC samples are unknown, however the RC drilling practices prior to DNS are assumed to have been standard industry practice for the time.</li> </ul>
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	<ul> <li>Drill core is logged for geotechnical and structural geology, lithology, alteration, mineralization and mineralogy, presence and type of quartz veining, and presence/intensity of Fe-oxides.</li> <li>Structural data including veins, shears, fractures are recorded relative to the core axis.</li> <li>Where core has been oriented measurements are collected using a "rocket launcher" and recorded as normal strike / dip (as opposed to alpha/beta).</li> <li>The RC chip samples were logged descriptively and codes are used to describe lithology and alteration type / intensity, as well as various percentages of minerals.</li> </ul>
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	<ul> <li>Core logging is both qualitative and quantitative.</li> <li>Core is logged descriptively and codes are used to describe all alteration type/ intensity, quartz type and intensity as well as various percentages of minerals.</li> <li>Whole drill core is photographed at the drill rig and half core is photographed again after sampling.</li> </ul>



Criteria	JORC Code explanation	Commentary
	The total length and percentage of the relevant intersections logged.	<ul> <li>All diamond drill holes are logged for geotechnical and geological information.</li> <li>All RC drill chips are logged to a level of detail to support appropriate mineral resource estimation.</li> </ul>
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	<ul> <li>Diamond drill core is sawn lengthwise into two equal parts (halves).</li> <li>Samples of half core are taken on approximately one metre intervals.</li> <li>Efforts are made to ensure core samples are greater than 0.5m and no more than 2.0m.</li> <li>Continuous sampling is completed through mineralized vein lodes and selective sampling is used outside of these mineralised intervals.</li> </ul>
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	<ul> <li>A triple tier splitter was utilised at the RC rig to collect the 1m samples into calico bags for assay. The splitter was cleaned between each samples, whilst the cyclone was cleaned after each 6m rod change. Wet samples are dried prior to splitting to get a representative sample.</li> <li>Development and stope samples are taken as rock chips by face channel sampling of the mining face computer to explicit the prior to split the prior to splitter by face channel sampling of the mining face computer to explicit the prior to split th</li></ul>
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	<ul> <li>Diamond core sample size is considered to be appropriate for this style of deposit.</li> <li>Sampling of half core is minerals industry standard practice.</li> <li>Sample preparation involves drying, weighing, crushing (95% &lt;5mm) and pulverising (95% &lt;75um) the entire sample using a LM2 pulveriser.</li> </ul>
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	<ul> <li>Duplicate samples are collected and assayed.</li> <li>Certified reference material or "standards" are utilised.</li> </ul>
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	<ul> <li>Duplicates of half-core samples have been taken and demonstrate variability expected in a narrow vein, high grade gold deposit.</li> <li>Regular and systematic insertion of blanks (1 in 20 samples) and standards (1 in 20 samples) have been carried out since the start of the drilling programs in 2007.</li> <li>The current practice by SCG, for grade control underground face sample is to take a field duplicate every fifty samples.</li> </ul>
	Whether sample sizes are appropriate to the grain size of the material being sampled.	<ul> <li>Samples of half diamond drill core is appropriate for the grain size of mineralization being sampled.</li> </ul>



Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	<ul> <li>Exploration drilling samples are crushed, pulverized and assayed at Intertek Testing Services laboratory http://www.intertek.com/minerals/global-services. The following elements and ITS techniques are used:</li> <li>Triple acid digestion (HCL/HNO3 /HCLO4).</li> <li>Au by 50 gram Fire Assay with lower/upper detection limits of 0.005/50 ppm Au.</li> <li>Ag by 30 g AAS with accurate volumetric finish with lower/upper detection limits of 5/10,000ppm Ag.</li> <li>Grade control and Underground Face samples are analysed on site by PT. Geoservices http://www.geoservices.co.id/mineral-analysis. Sub-sample of 30 gram pulps are analysed by Aqua Regia methods for Au and Ag.</li> </ul>
	For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	• Not Applicable
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	<ul> <li>Duplicates that have been collected and analysed recently demonstrate a level variability expected from a narrow vein, high grade precious metal deposit.</li> <li>Blanks have not been inserted in the sample steam.</li> <li>Certified Reference Material (CRM) or "standards" have been inserted into the sample stream at regular interval (1/20) with results showing that Lab performance is well within industry standard.</li> <li>Umpire Lab analysis of duplicates of coarse rejects and pulps have been completed at SGS Indo Assay, Jakarta every six months on average with results demonstrating that the primary Lab, Intertek is within industry standards.</li> </ul>
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	<ul> <li>No independent sampling has been undertaken by Cube.</li> </ul>
	The use of twinned holes.	No specific twin holes have been drilled. Based on the close spaced drilling, the mineralisation intersections show high grade variability between the holes.



Criteria	JORC Code explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	<ul> <li>Drilling data is collected on hard copies (example A3 geological log sheet) and MS Excel files (example sample consignment).</li> <li>Geologists manually enter drill logs, sample consignments, etc.</li> <li>Drilling data is stored and managed using MS Access.</li> <li>Database Administrator receives drilling, geological and assay data and loads directly into MS Access.</li> </ul>
	Discuss any adjustment to assay data.	<ul> <li>No adjustments have been made to assay data, all assays in database are based on original assay results.</li> </ul>
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	<ul> <li>In 2007 SCG commissioned PT GeoServices to complete a topographic survey of the Tembang postmining surface. A set of survey beacons was established tied to the Indonesian UTM national grid. From the pick-up of old drill collar markers and infrastructure a correction factor was established to adjust the existing BTM data to true UTM coordinates.</li> <li>All drill collars are surveyed by company surveyors using total station survey equipment and tied in to the independently verified system of triangulation benchmarks as outlined above.</li> <li>All drill holes were surveyed at 50m intervals downhole either with a single shot camera or as with the recent drilling using a digital orientation device. Readings indicate that deviation is minimal.</li> </ul>
	Specification of the grid system used.	All coordinates are quoted in UTM-UTS Zone 48 South.
	Quality and adequacy of topographic control.	<ul> <li>Since 2007 the definition of the surface topography has been improved with more detailed survey work. The approximate depths of the flooded pits have been established from raft borne plumb-line surveys. The topographic data used in the reported data was updated in 2014 and includes more than 125,000 individual survey points, and is kept updated during the mining process.</li> <li>Since backfill was encountered after dewatering Berenai pit in later part of 2016, ammendments to the 2014 surface topography have been estimated for the Berenai, Bujang and Belinau historical open-pits using projections to current pit wall slopes.</li> </ul>



Criteria	JORC Code explanation	Commentary
Data spacing and distribution	Data spacing for reporting of Exploration Results.	<ul> <li>Exploration data spacing is variable with collar spacing varying from 25m x 25m to 50m x 50m. Grade control data spacing is 12.5m x 5m. Underground face channel samples are taken every cut (+/- 3meters).</li> </ul>
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied	<ul> <li>The data spacing and distribution is sufficient to establish the geological and grade continuity appropriate for the mineral resource estimation. Data spacing has been taken into account when determining the mineral resource classification to be applied to the estimate.</li> </ul>
	Whether sample compositing has been applied.	<ul> <li>No compositing has been applied to reporting of drilling results.</li> <li>Downhole composite has used for Berenai</li> <li>Compositing of assay data for the Belinau Mineral Resource estimation has used mineralised intercept intervals.</li> </ul>
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	<ul> <li>Most of the drilling is planned and drilled normal (right) angles to the target vein lodes except in areas where natural or man-made topography can't be avoided.</li> </ul>
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	No material sampling bias caused by drilling direction has been recognized.
Sample Security	The measures taken to ensure sample security.	<ul> <li>Drill core samples are moved by vehicle in covered core trays from the drill site to the core processing facility at Tembang Camp.</li> <li>Company personnel log, photograph and split the core. Half of the core is retained in the core shed as a geological reference and further test work if required.</li> <li>All samples for assay are bagged in numbered calico sample bags which are then sewn in to polyweave bags for transport and secured with cable wire and labelled security tags.</li> <li>Samples are dispatched by a regular door to door courier service from the Tembang Site straight to the ITS laboratory in Jakarta.</li> <li>This is considered to be a secure and reasonable procedure and no instances of tampering with samples have been observed since commencement of drilling activities in 2007.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Representatives of H&amp;S Consultants visited the project site in 2013 to review core handling and sampling procedures and found these procedures to industry best practices.</li> <li>Representatives of Cube Consulting visited the project site in 2013 and December 2016 to review core handling and sampling procedures and found these procedures to be industry best practices.</li> </ul>

Section 2: Reporting of Exploration Results

## (Criteria listed in the preceding section also apply to this section.)

Criteria	Explanation
Mineral tenement and land tenure status	<ul> <li>Sumatra's tenure is under the Indonesian national Izin Usaha Pertambangan or Mining Business License (IUP) system. The Tembang project is held by PT Dwinad Nusa Sejahtera (DNS), a 100% owned subsidiary of SCG, within IUP licence 22/KPTS/DISAMBEN/2009 that covers both the old Rawas Mine site and surrounding area covering a total of approximately 100km2.</li> </ul>
	• Sumatra's tenure is in "production forest" and as such requires a "borrow and use" permit from the Indonesian department of forestry. Sumatra was granted a borrow and use permit for its Dwinad IUP in April 2013 (ASX release 26/04/2013).
Exploration done by other parties	<ul> <li>CRA (now Rio Tinto) started exploring in the area in 1986 and negotiated a Contract of Work agreement with the government under the name of a PMA company, PT Barisan Tropical Mining (PT BTM). The Rawas deposit was outlined, and regional sampling was carried out elsewhere within the then Contract of Work (COW) boundaries. By 1991, CRA had drilled 81 diamond drill holes for 11,747 metres, and completed over 9,000 metres of trenching mainly focussed on the Berenai and associated vein systems. CRA conducted feasibility at the time and concluded that the deposit did not have the potential to meet CRA's Mineral Resource size criteria.</li> </ul>
	• Laverton took over the BTM CoW and entered the Feasibility Study period in 1991. A move to the Construction period was approved in November 1995. Laverton completed a further 17,148 metres of diamond drilling and 101,388 metres of RC drilling for the feasibility and construction.
Geology	The mineralisation at Tembang is considered to be an intermediate sulphidation epithermal style.
	Gold-silver bearing quartz sulphide veins are hosted by mostly brittle andesitic rocks of the Miocene Hulusimpang Formation.
	Base metals are generally low except at depth in some of the vein systems.
Drill hole information	• This current report is not disclosing specific drilling results. All recent drill hole intersections have been separately reported.
	• List of drill holes forming the basis of the Mineral Resource estimates is in the report Appendix 5.
Data aggregation methods	• Economic intercepts of gold and silver are calculated and reported using the length-weighted averages of individual samples at a nominal cut-off value of 0.5 g/t Au for Berenai Mineral Resource. This resource is intended to be mined by an open pit.
Relationship between mineralisation widths and intercept lengths	• The majority of drilling is oriented approximately orthogonal to the known orientation of mineralization. However, the intersection width is measured down the drillhole trace and may not be the true width.
	Drilling results are reported as intercept lengths due to the anastomosing nature of mineralized lodes.
	Mineral Resource model/estimation wireframes are considered to be true widths.



Criteria	Explanation
Diagrams	Horizontal plan and vertical section views are included in this report where relevant.
Balanced reporting	• All mineralised intercepts used in this mineral resource estimate are presented in Appendix 5 of the report.
Other substantive exploration data	Not applicable to this report.
Further work	• The Company is continuing to infill the resource with the intention to convert Mineral Resources to Ore Reserves in a phased manner.