

## ASX RELEASE

**1 December 2021**

# POSITIVE SCOPING STUDY COMPLETED ON MCB COPPER-GOLD PROJECT CONFIRMS SIGNIFICANT POTENTIAL

### HIGHLIGHTS

- Scoping Study confirms the potential for a 25 year mine life underground mining operation at the MCB Copper-Gold Project located in the Philippines, delivering robust economic and financial outcomes.
- Optimised mine plan focusing on the high-grade Cu-Au portion of the MRE, equating to 49Mt at 0.85% Cu and 0.41g/t Au\*, 100% of which is classified as Indicated Resources.
- Metallurgical test work recoveries of 94% Cu and 79% Au.
- The MCB Project comprises classic porphyry style Cu-Au mineralisation with a high-grade sub vertical core, which has been the sole focus of the current study, representing approximately 16% of the total Mineral Resource Estimate.
- Optimised underground mine plan identified bulk mining by sublevel open stoping with paste backfill as the most cost-effective mining method.
- Celsius will now proceed with all workstreams associated with securing mining title, including the submission of requirements for the Declaration of Mining Project Feasibility ("DMPF")

*\* Quoted resources utilising a 0.5% Cu lower cut-off grade. See Announcement of 12 January 2021*

## Cautionary Statement

### Scoping Study - General

The MCB Project Scoping Study (the “Scoping Study” or the “Study”) referred to in this ASX announcement has been undertaken to assess the potential for the development of the Maalinao-Caigutan-Biyog (“MCB Project”) porphyry copper-gold deposit and the construction of a suitable copper concentrator located in the Municipality of Pasil, Kalinga Province, approximately 320km north of Manila, Philippines. It is a preliminary technical and economic study as to the viability of the MCB Project and is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves.

The Study is based entirely on Indicated Mineral Resources and represents only a small portion of the JORC Mineral Resources that were announced by the Company on 12 January 2021. Further exploration and evaluation work and appropriate studies are required before Celsius will be able to estimate Ore Reserves or provide any assurance of an economic development case.

### Material Assumptions & Production Target

The Scoping Study was based on material assumptions including availability of funding and includes a preliminary economic analysis based on a number of possible production targets (“Production Target”) and assumptions on Modifying Factors and evaluation of other relevant factors estimated by a Competent Person to be at the level of a Scoping Study.

While each of the Modifying Factors was considered and applied to a level that is considered to be appropriate for a Scoping Study, there is no certainty of eventual conversion to Ore Reserves or that the Production Target will be realised. Similarly, while the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Study will be achieved.

### Funding

There is no certainty that the Company will be able to source the required development funding estimated within the Study when required. The Company considers that there is a reasonable expectation that a project of this scale will be able to secure necessary funding with a combination of debt and equity, subject to the delivery of key development milestones. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company’s shares. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Study.

### Forward Looking Statements

This ASX announcement and accompanying Scoping Study Summary Report contains a series of forward-looking statements. Forward-looking statements are necessarily based on estimates and assumptions that, while considered reasonable by the Company, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Since forward-looking statements address future events and conditions, by their very nature, they involve inherent risks and uncertainties. Actual results in each case could differ materially from those currently anticipated in such statements. Investors are cautioned not to place undue reliance on forward-looking statements.

The Company has concluded that it has a reasonable basis for providing these forward-looking statements and the forecast financial information included in this ASX announcement and accompanying Study. The detailed reasons for these conclusions are outlined throughout the ASX announcement and accompanying Study.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Study.

The Company is not aware of any other new information or data that materially affects the information included in that release. All material assumptions and technical parameters underpinning the estimates in the ASX release continue to apply and have not materially changed.

This ASX announcement and accompanying Study have been prepared in compliance with the current JORC Code (2012) and the ASX Listing Rules. All material assumptions on which the Production Target and forecast financial information are based, have been included in this ASX announcement and accompanying Study.

**Celsius Resources Limited** ("Celsius" or "the Company") is pleased to announce that its Philippine subsidiary Makilala Mining Company, Inc. ("MMCI") has completed the Scoping Study for the Maalinao-Caigutan-Biyog Copper-Gold Project ("MCB" or "MCB Project") located in the Philippines. The Study highlights the opportunity for the Company to develop the MCB Project as a long life, technically robust underground mining operation producing high quality copper concentrate.

The Study and resulting optimised underground mine planning and scheduling utilised only the Indicated portion of the high-grade mineralised core within the JORC compliant Mineral Resource Estimate ("MRE") as announced on 12 January 2021. The proposed mining plan is based on mining of 48.8mt @ 0.85% Cu & 0.41g/t Au from this high-grade core, which represents less than 28% of the total contained Cu in the MRE. The studies identified sublevel open stoping ("SLOS") as the most efficient mining method taking into account the wide zone of sub vertical mineralisation and local geotechnical considerations.

The table below summarises the key physical and financial outcomes of the Scoping Study which was completed to an overall +/-30% accuracy and based on assumptions set out in Table 1 below. The table also highlights the economic significance of mining the high-grade core zone during the first 10 years of the operation. Technical and economic highlights are summarised as follows:

- **Pre-tax NPV<sup>(8%)</sup> of US\$618m (~A\$865m) at an IRR of 35% and Post-tax NPV<sup>(8%)</sup> of US\$464m (~A\$650m) at an IRR of 31 %, assuming a \$4.00/lb Cu and US\$1695/oz Au price**
- **At spot price of US\$4.48/lb Cu and US\$1792/oz Au, the Pre-tax NPV<sup>(8%)</sup> increases to US\$818m (~A\$1.15b)**
- **C1 Cash Cost during the first 10 years average US\$0.73/lb Cu and LOM average of US\$1.29/lb Cu, net of credits**
- **Initial CAPEX of US\$253m and a payback period of 2.67 years**

**Table 1. Summary of MCB Scoping Study – Key Outcomes (post tax)**

ITEM	PREFERRED CASE FIRST 10 YEARS	PREFERRED CASE LIFE OF MINE
- Ore Mined	22.2Mt	48.8Mt
- Copper grade	1.14%	0.85%
- Gold grade	0.54 g/t	0.41 g/t
- Copper Recovery	94.2%	94.2%
- Gold Recovery	79.0%	79.0%
Mine Life	10	25
Process Plant throughput (nominal)	2.28Mtpa	2.28Mtpa
Ave Annual Copper in concentrate	22ktpa	16ktpa
Ave Annual Gold in concentrate	27kozpa	19kozpa
Copper Price (assumed)	US\$4.00/lb	US\$ 4.00/lb
Gold Price (assumed)	US\$1,695/oz	US\$1,695/oz
Initial Capital	US\$253m	US\$253m
NPV (Post tax, 8% real)	NA	US\$464m
NPV (Pre tax, % real)	NA	US\$618m
IRR (post tax)	NA	31%
Payback	2.67yrs	2.67yrs
LOM C1 Cost (net of gold credits)	US\$ 0.73/lb Cu	US\$ 1.29/lb

\* "Post Tax" includes statutory and corporate taxes. "Pre- Tax" excludes Corporate Tax only. Final tax position will be subject to negotiation with the Government of Philippines.

Mining contemplates a nominal mining rate of 190kt per month (2.28Mtpa) via single decline mining to a maximum depth of 600m below the portal at RL 975. The processing will then be undertaken using an industry standard process flow sheet comprising milling, rougher flotation, regrind milling and cleaner flotation to produce an average concentrate grade of 25.8% Cu and 6.5g/t Au. Preliminary test work to date has shown average expected recoveries of 94% of Cu and 79% for Au across a range of feed grades and has also indicated the concentrate is likely to be free of any deleterious elements.

The MCB Project will require re-establishment of a section of the electricity grid to provide power to the plant and amenities plus upgrading of a portion of the local road network to provide for concentrate transport to the nearest port, being Port Samalogue, located approximately 180 km to the northwest.

Significant potential remains to increase the MRE both along strike and down dip from the current limits of drilling, further exploration is planned to prioritise exploration for expansion of the high grade portion of the resource.

The Scoping Study was managed by MMCI in the Philippines, with key technical and financial contributions conducted by the following highly experienced independent consultants.

**Table 1. Technical studies undertaken by various experts for MCB Project**

Technical Studies	Experts / Consultants
Mine Design	Mining Plus Pty Ltd
Metallurgical and Process Design	BMECS Pty Ltd
Paste Backfill Plant Design	Metso Outotec
Metallurgical Test Works	ALS Pty Ltd Perth
Dam Design	Macaferri Philippines
Geology/Resource	Steve Olsen (MAusIMM, AIG)
Infrastructure	Simon Baldo Jr
Financial/Optimisation	Blackbird Partners

### Next Steps

Based on the robust financial and technical outcomes of the Study, the Board of Celsius has elected to immediately embark on the necessary work streams to convert the current EP to a Mining Title. This work will include the submission of requirements for the Declaration of Mining Project Feasibility ("DMPF") in line with the relevant Philippine national government guidelines.

Furthermore, the Company will immediately commence optimisation and trade off studies to augment some of the core elements of the project, with a particular focus on mining and processing. It is also planned to undertake additional infill drilling programs for the purpose of Mineral Resource definition. This drilling will also provide additional samples for ongoing metallurgical test work.

*"MMCI wishes to extend its sincerest gratitude to the Balatoc community, Local Government of Pasil and the Barangay Council of Balatoc for your invaluable support through these years leading up to this critical milestone. The Scoping Study results identified a potentially large and long mine life which has the potential to provide significant benefits to the Company's shareholders, the host communities and the Philippine economy in general. The high-quality detailed study confirmed that the ore body can be mined via a standard underground mining method. Studies on mineral processing, tailings management, infrastructure, permitting and approvals including environment and social impacts*

indicated no significant impediments to developing the MCB Project. Marketing feedback from commodity traders and smelters indicated that the lack of impurities makes the potential MCB copper/gold concentrate highly marketable," according to the Philippine Country Operations Director, Peter Hume.

Celsius Chairman Martin Buckingham also expressed that *"The Celsius Board is extremely happy with the very good Study outcomes and the fact that opportunities exist to further enhance individual components of the project during the forward work program and definitive feasibility study process. A key focus in the future will be environmental care using the latest technologies such as paste tailings and green energy applications. A vast amount of work has gone into this Study and I would like to thank our dedicated team and advisors who have worked round the clock in producing this comprehensive document."*

This announcement has been authorised by the Board of Directors of Celsius Resources Limited.

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#### **Competent Persons Statement**

*Information in this report relating to Exploration Results and Mineral Resources, including the Mineral Resources which form the Production Targets, is based on information compiled, reviewed and assessed by Mr. Steven Olsen, who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr. Olsen is a consultant to Celsius Resources and 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 by the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Olsen consents to the inclusion of the data in the form and context in which it appears.*

*Information in this report relating to metallurgical results is based on information compiled, reviewed and assessed by Mr. John Burgess, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr. Burgess is a consultant to Celsius Resources and 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 by the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Burgess consents to the inclusion of the data in the form and context in which it appears.*

#### **Listing Rule 5.23 Disclosure**

*The Company confirms that it is not aware of any new information or data that relates to Exploration Results and Mineral Resources at the MCB Project and that all material assumptions and technical parameters underpinning the Mineral Resource continue to apply. The Company notes that, as disclosed in this announcement and in previous announcements, a drilling program is currently underway at the MCB Project the results of which will be incorporated into an updated Mineral Resource in the future and that the current Scoping Study may provide new assumptions and parameters for use in that Mineral Resource.*



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# MCB Project Scoping Study

## CONDENSED SUMMARY

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DECEMBER 2021



## Cautionary Statement

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A detailed photograph of a rock face with prominent horizontal and diagonal mineral veins in shades of teal, blue, and white, set against a darker brown rock matrix. A diagonal white line separates this image from the white background of the right half of the page.

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# SCOPING STUDY HIGHLIGHTS

- Scoping Study confirms the potential for a 25 year mine life underground mining operation at the MCB Copper-Gold Project located in the Philippines.
- Optimised mine plan focusing on the high-grade Cu-Au portion of the MRE, equating to 49Mt at 0.85% Cu and 0.41 g/t Au, 100% of which is classified as Indicated Resources.
- Metallurgical test work recoveries of 94% Cu and 79% Au.
- The MCB project comprises classic porphyry style Cu-Au mineralisation with a high-grade sub vertical core, which has been the sole focus of the current study, representing approximately 28% of the total Mineral Resource Estimate.
- Optimised underground mine plan identified bulk mining by sublevel open stoping with paste backfill as the most cost-effective mining method.
- Celsius will now proceed with all workstreams associated with securing Mining Title, including the submission of requirements for the Declaration of Mining Project Feasibility ("DMPF").



# SUMMARY OF FINANCIAL OUTCOMES

## Base case

- Pre-tax NPV<sup>(8%)</sup> US\$618m (~A\$865m) at an IRR of 35% assuming US\$4/lb Cu & US\$1,695/oz Au
- Post-tax NPV<sup>(8%)</sup> US\$464m (~A\$650m) at an IRR of 31% assuming US\$4/lb Cu & US\$1,695/oz Au

## Years 1-10 C1 cash cost average

US\$0.73/lb Cu

## Spot case

- Pre-tax NPV<sup>(8%)</sup> US\$818m (~A\$1.15b) at an IRR of 41% assuming spot of US\$4.481/lb Cu & US\$1,792.70/oz Au
- Post-tax NPV<sup>(8%)</sup> US\$617m (~A\$864m) at an IRR of 35% assuming spot of US\$4.481/lb Cu & US\$1,792.70/oz Au

## LOM C1 cash cost

US\$1.29/lb Cu, net of Au credits

## Initial CapEx

US\$253m

## Payback period

2.67 years

## Years 1 to 10 production

90ktpa of concentrate containing 22ktpa Cu and 27kozpa Au

Quoted resources utilising a 0.5% Cu lower cut-off grade

## Discount Rate

## NPV BASE CASE (post tax)

USD

AUD

4.5%	\$660m	\$924m
5%	\$628m	\$880m
8% (Preferred Case)	\$464m	\$650m
10%	\$379m	\$531m

AUD:US FX spot rate of 0.71



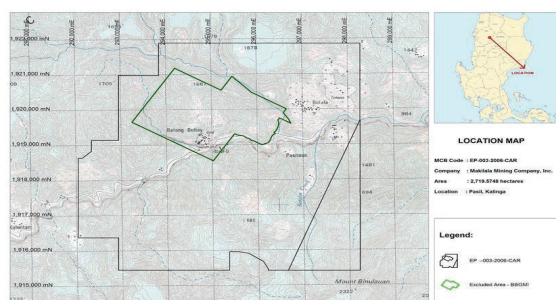
# PROJECT LOCATION

The Barangay Balatoc area in the northern Philippines hosts the MCB Project which is situated in the Municipality of Pasil, Kalinga Province as shown in Figure 1. The Project is covered by a single Exploration Tenement (EP-003-2006-CAR) with an approximate area of 2,720 hectares of generally uninhabited grasslands with steep slopes and along constricted deep riverbanks. It surrounds the claim area of the former local mining company, Batong Buhay Gold Mines Inc., ("BBGMI") which is now under the control of the government-owned Philippine Mining Development Corporation ("PMDC") and is excluded from this tenement (see Figure 2 ).

Access to MCB is via a short domestic flight from Manila to Tuguegarao City or Cauayan City followed by a four-hour drive along sealed roads to Tabuk City and then the Municipality of Lubuagan, followed by a series of gravel roads.



**Figure 1. General location of MCB Project**



**Figure 2. MCB Project Tenement showing the excluded BBGMI area.**

# GEOLOGY AND MINERALISATION

The Philippines is one of the most richly endowed Cu-Au regions of southeast Asia, which hosts the MCB copper-gold deposit, classified as a porphyry deposit. The mineralisation is hosted in a series of overprinting vein sets and is associated with late stage granitic (tonalite) intrusions. The mineralised veins predominantly occur along the margins of these intrusions at or near the contact with the older surrounding volcanic host rock.

Detailed geological interpretation has identified two main structural controls on mineralisation. The first is a steep dipping northeast trending regional fabric which controls the location of the intrusions and the second a series of NNW trending faults which control mineralisation.



# MINERAL RESOURCE ESTIMATE

A maiden JORC compliant Mineral Resource Estimate ("MRE") was declared for the MCB Project in January 2021 (refer to announcement of 12 January 2021), comprising **313.8 million tonnes @ 0.48% copper** and **0.15 g/t gold**, for **1.5 million tonnes of contained copper** and **1.47 million ounces of gold** of which;

- 290.3 million tonnes @ 0.48% copper and 0.15 g/t gold is classified as Indicated; and
- 23.5 million tonnes @ 0.48% copper and 0.10 g/t gold is classified as Inferred.

The above MRE was based on a cut-off grade of 0.2% copper. However, within the MRE, **a high-grade core of 93.7 million tonnes @ 0.80% copper and 0.28g/t gold** was defined as per Table 1 below, which was the focus of the Scoping Study.

**Table 1: High-Grade Core of the MRE at MCB at a cut-off grade of 0.5% Cu**

CLASSIFICATION	TONNES (MT)	COPPER GRADE (%)	GOLD GRADE (G/T)	COPPER METAL (KT)	GOLD METAL (KOZS)
Indicated	79.8	0.83	0.30	664	780
Inferred	13.9	0.59	0.11	82	51
<b>TOTAL</b>	<b>93.7</b>	<b>0.80</b>	<b>0.28</b>	<b>746</b>	<b>831</b>

Note: Copper and Gold grades for Indicated Resources are rounded to two significant figures. Some apparent differences in Copper tonnes or Gold ounces may occur due to rounding.

All of the Mineral Resources, which form the basis of the Scoping Study mine plan, are in the **Indicated** category.

# MINING METHOD

The MCB Project is a porphyry copper-gold deposit amenable to underground mining. Three mining methods, namely, block caving, sublevel caving, and sublevel open stoping ("SLOS"), were investigated and compared for the purpose of selecting a preferred mining method to develop the MCB Project. This resulted in SLOS being the preferred mining method and was consequently selected based on the geotechnical review, mining method trade-off study, and value optimisation study. Paste backfill technology has been incorporated into the design to enable a primary-secondary extraction sequence, allowing for higher resource recovery and mining productivity, reducing tailings deposit requirements and maximising strength relative to cement content. The proposed design aims to produce 190,000 tonnes per month of ore (2.28Mtpa) by SLOS mining method. At times there will be periods which will include 30ktpa added to the production rate due to capital development being classified as economic material.

An isometric 3D view of the planned underground mine and proposed mining blocks is shown in Figure 3.

The final undiluted ore cut-off grade ("COG") was calculated to be 0.56% CuEq ("copper equivalent"). The COG calculation incorporates the results from the metallurgical test work combined with the assumed values for commodity prices. The mining operation assumes production of approximately 49.6mt of total ore and waste mined over the life of the mine. The current strategy considered in this study is to utilise a mining contractor to undertake the mine operations.

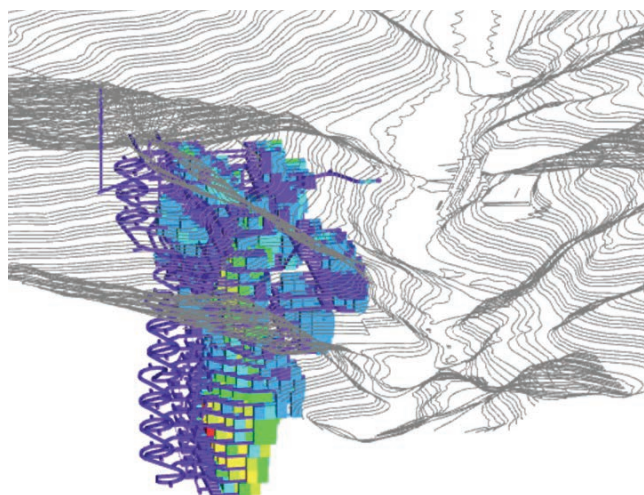
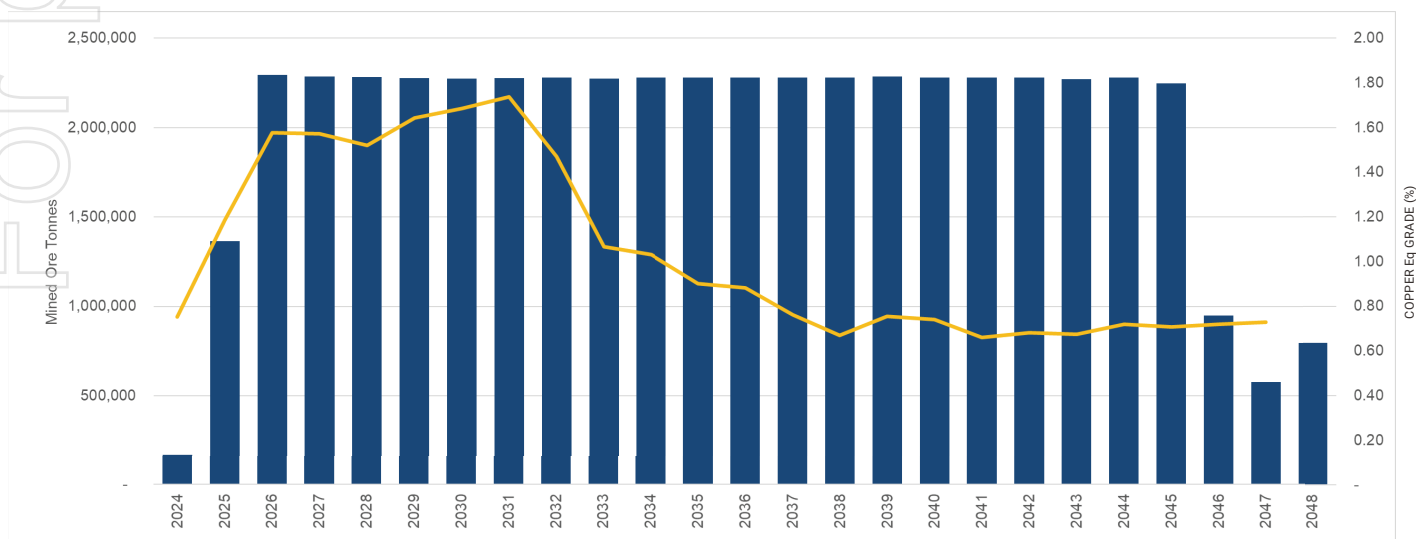


Figure 3. MCB Mine Design



**Table 2. Annual scheduled ROM Tonnes and Cu Eq Grade**  
Copper Equivalent (%) = Copper Grade (%) + 0.544 Gold Grade (g/t)

# MINERAL PROCESSING AND METALLURGICAL TESTING

Representative ore samples were selected from core samples taken during the recent definition diamond drilling program at MCB conducted in 2021. A total of 172.5 kilograms of representative samples were taken from MCB-033 and MCB-034, where five main composite samples have been used for flowsheet development test work while individual samples have been tested for variability of response.

Two mineralised composites weighing 63.1 kg were used to undertake SMC comminution tests; while 5 additional composites of varying grade, from 0.33% Cu upto 2.29% Cu totalling 109.4 kg were prepared for sulphide flotation flowsheet development test work. The test work was performed at ALS Metallurgy Pty Ltd in Perth.

The comminution test work is based on a requirement to obtain ball mill index and basic grinding and rock strength characteristics. The calculated Bond Work Index from the SMC comminution results is 18.8kWh/t using 150µm closing screen.

The recovery of copper to rougher stage test work concentrates averaged 96.7% at an average grade of 10% Cu. Corresponding average gold recovery and grades were 85.3% and 2.5g/t Au. Tests were undertaken at a range of grind sizes from 106µm to 200µm with results showing only limited variability.

Products from the rougher test work were then reground to P80 38µm for final cleaner stage float test work. Results showed overall average Cu recoveries of 94.2% and Au recoveries of 79.0%. The concentrates produced during test work averaged 25.8% Cu and 6.5g/t Au. The results of average multi element analysis (Appendix 1) indicates the potential concentrates to be produced from the MCB Project are unlikely to contain material concentrations of deleterious material.

The test work was completed using a standard range of reagents that would be expected for this type of mineralisation. The optimum reagent regime selected from the detailed test work conducted on sample D utilised grinding to 38µm, adding lime to control the pH to 10 (in the rougher), adding PAX and promotor DSP009 when cleaning additional lime to control the pH to 11.

SAMPLE	FEED		CONCENTRATE			
	COPPER	GOLD	COPPER		GOLD	
	%	PPM	%	%DIST	PPM	%DIST
<b>2A Composite</b>	2.29	0.69	31.7	97.1	8.38	85.7
<b>2B Composite</b>	0.96	0.27	21.7	93.7	4.76	73.0
<b>2C Composite</b>	0.38	0.19	18.6	88.4	3.74	66.6
<b>2D Composite</b>	0.57	0.12	23.8	94.8	2.82	55.2
<b>2E Composite</b>	0.70	0.26	17.7	85.6	6.51	84.8
<b>Weighted Average</b>	1.50	0.45	25.8	94.2	6.46	79.0

**Table 3. Cleaner Float Test Work Results**



# PROCESS DESIGN

The Project process plant design is based on a single processing train configuration, with a maximum capacity ore feed rate of 2.4 Mtpa (nominal 2.28Mtpa) to produce bulk copper-gold concentrate.

The key process design criteria are shown in Table 4 below, based on a full evaluation of all relevant test work, consisting of bench scale. Equipment sizing is based on estimated peak grade throughput in year 5 of the Scoping Study mine plan.

**Table 4. Process plant basis for design criteria**

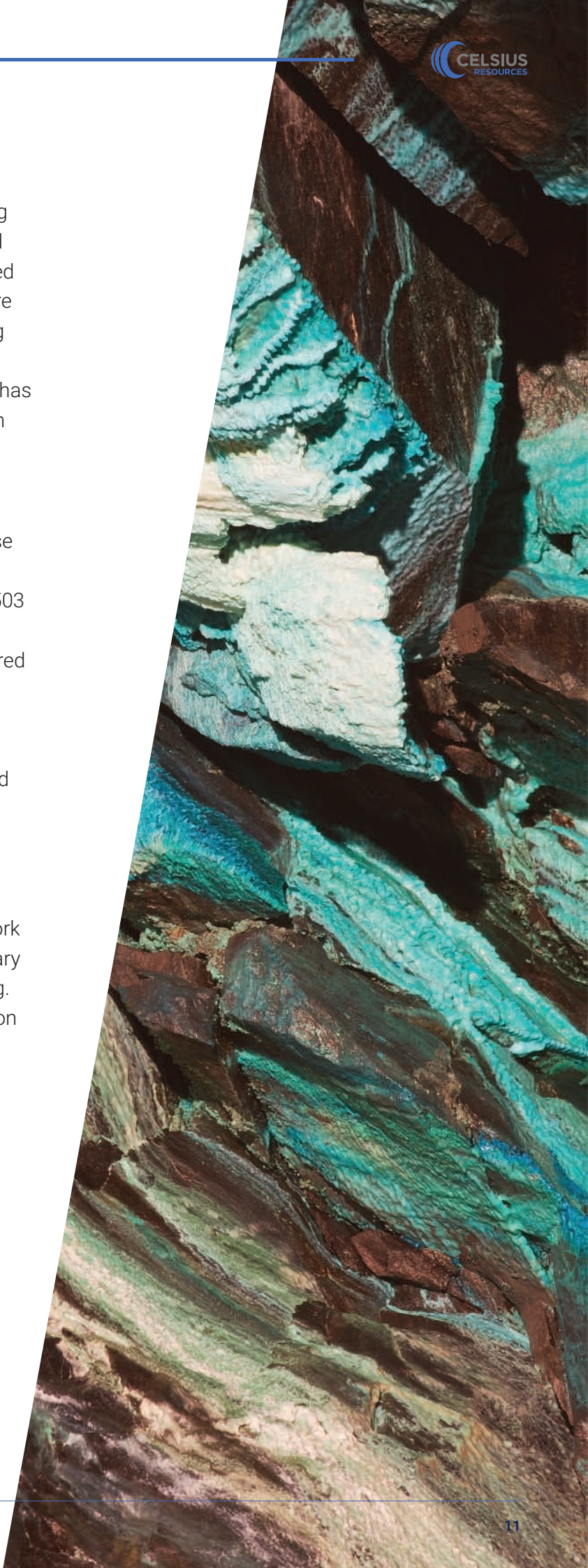
	UOM	VALUE
Operating Schedule	Days	365
Life of Mine	Year	25
Run of Mine, LOM	Mt	48.8
Mill Throughput (Range)	Mtpa	2.0 – 2.4
Plant Availability		
Concentrator	%	91.3
Filter plant and concentrate conveying	%	82.4
Copper Head Grade (peak grade)	%	1.36
Gold Head Grade	g/t	0.69
Copper Recovery	%	94.2
Gold Recovery	%	79.0
Copper Concentrate Grade, weighted ave.	%	25.8
Gold Concentrate Grade, weighted ave.	g/t	6.5g/t
Concentrate Production, modelled maximum	kt/y	113

The scoping level design includes all ore processing facilities from primary crushing to concentrate load out for transport and tailings disposal. The proposed design flowsheet consists of unit processes that are in general used throughout the minerals processing industry and commonly used in copper flotation plants. Limited composite and variability test work has been conducted for the Study to support the design basis for the flowsheet.

## Tailings Treatment

The MCB Project SLOS method incorporates the use of paste backfill in the operation requiring average paste fill of 703,400m<sup>3</sup> pa and a maximum of 876,503 m<sup>3</sup> pa over the 25 years. A Tailings Reclaim Paste Back Fill Plant will be installed to produce the required paste backfill.

The plant will utilise dry stack tailings from the adjacent tailings filtration plant, which are reclaimed via a front-end loader and fed into the tailings feed hopper. Tailings are then mixed with binder, slurry and water as required to produce a paste fill of suitable rheology and strength. Acid mine drainage prediction test work was carried out on two test work composites of rougher tailings with these preliminary results suggesting that they are not acid-generating. The net acid generation results were below detection (<2kg(H<sub>2</sub>SO<sub>4</sub>)/t).



# PROJECT INFRASTRUCTURE

The MCB project will be comprised of an underground mine and surface infrastructures. The mine site layout includes three major areas: underground mine and its ancillary facilities, process plant, and general area facility. In addition there will be external infrastructure requirements including access roads, grid power and port loading facilities for concentrate product sales.

## a. Offsite Roads

Offsite roads refer to the main access from port to the mine site consisting of an existing provincial road from the port to Balangan, Boliney, Abra, and a new road connecting to the existing road in Colayo, Pasil, Kalinga, to the mine site that will be upgraded to allow transport of oversized cargo. These roads will mainly provide external access to existing community, logistical support during project construction and operation and concentrate transport to the nearest Port of Salomague, approximately 180 km west of the project site (Figures 4 & 5).

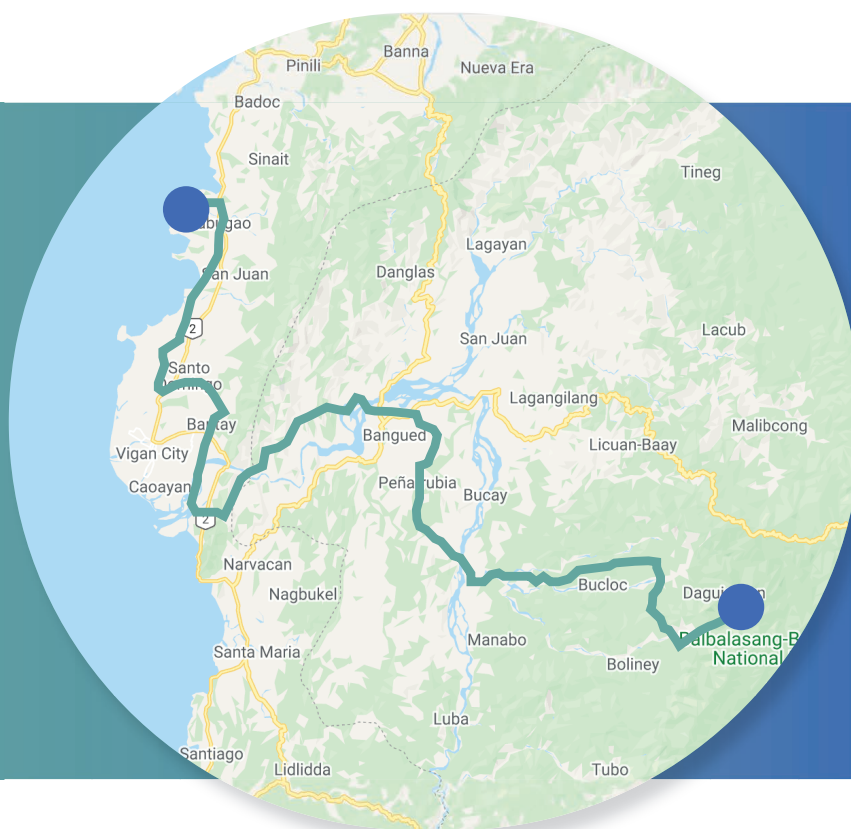


Figure 4. Offsite road alignment from the MCB mine site to the nearest Port Salomague in Ilocos Sur Province.



## **b. Port Facilities**

It is proposed the concentrate products will be transported from plant site to the port of Salomague by trucks in lined containers to eliminate the requirement for a dedicated port facility, and allow for temporary storage.

These containers will be stored in a laydown area near the port location and will be delivered to the port docking area once the shipment vessel is available.

The same laydown area will accommodate an offsite admin office and will be utilised to store bulk materials for construction and operations.

## **c. Power Transmission and Supply**

The calculated total power demand is 12 MW and will be sourced from the national grid and tapped through the nearest power supply substation in San Esteban, Ilocos Sur. Electrical transmission towers and supply line utilised during the operation of the BBGMI gold mine in the 1990's still exists and is currently being used to provide power to nearby communities. However, it is likely they will need additional upgrading to supply MCB power requirements. Alternative, low emission, power supply may also be obtained from the proposed nearby hydropower plants and geothermal plants within the province which are expected to be operational by the time construction commences.



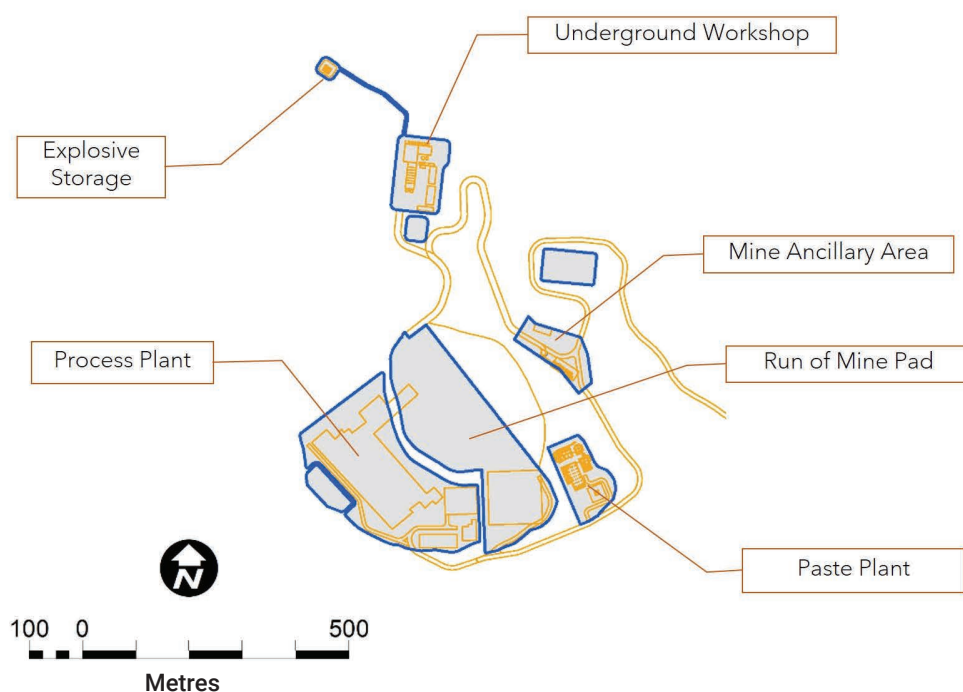
**Figure 5. Port Salomague, Ilocos Sur**

## d. Onsite Facilities

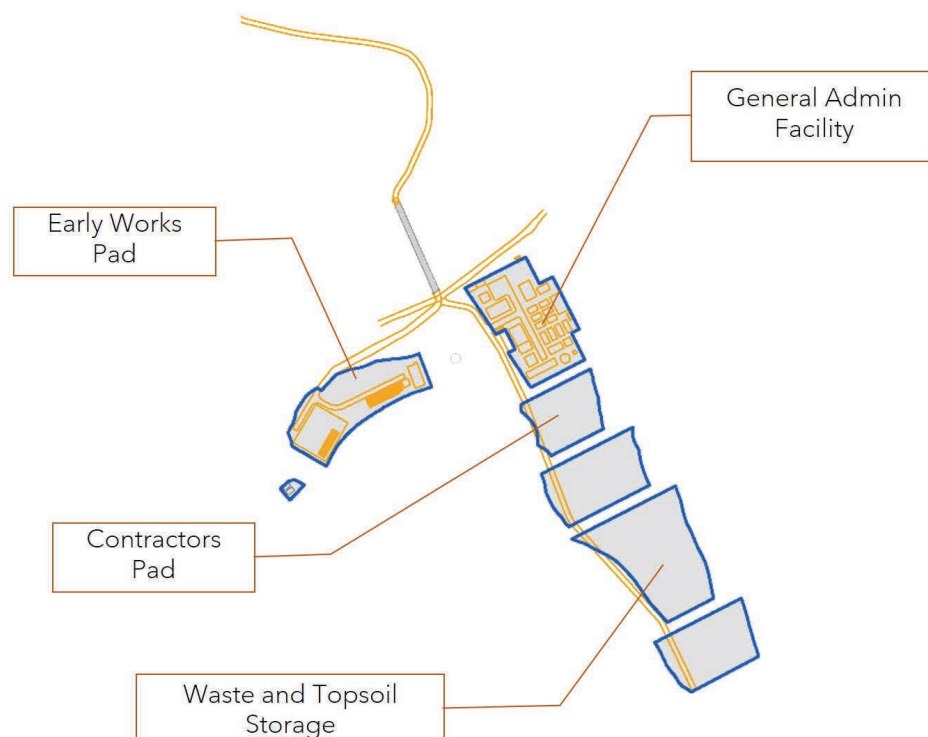
The onsite facilities include the process plant, surface mine facilities, and general and administration facility. Based on the initial Scoping Study level design the surface facilities require a total surface area of 32ha and a preliminary design layout is shown in Figure 6.

**Figure 6. MCB Mine site layout**

### Process Plant Layout



### General Admin. Facility Layout





## e. Site Water Management

A freshwater dam and the underground water collection pond with estimated capacity approximately 100,000m<sup>3</sup> and 500,000m<sup>3</sup>, respectively, will be constructed to support the site operations.

Clean water for the process plant and mining activities will be supplied from the freshwater dam, while all contact water from surface runoffs and underground dewatering will report to the collection pond. A water treatment plant or clarifier will be installed after the collection dam to remove the impurities from the contact water before discharging to the Pasil River.

Other structures including sedimentation/silt pond, sumps, and water drains will also be installed in strategic locations over the development areas.

## f. Slope Stabilisation Requirement

Ground instability on the southern part of the mine development area required for the proposed surface infrastructures, such as roads, and the surface breakthrough of the underground infrastructures which includes the by-pass decline portal and ventilation raise, thus, the need for slope stabilisation and protection.

The initial slope stabilisation plan was completed and proposes further investigation once additional geotechnical and other related information comes to hand.





# FINANCIAL OUTCOMES

**The Scoping Study has demonstrated the potential to deliver robust financial outcomes based on the optimised underground mining schedule and onsite processing via an industry standard sulphide flotation flow sheet.**

The Project has been scheduled (Preferred Case) to optimise cashflow in the first 10 years by preferentially mining the high grade sub vertical core of the MCB deposit above 0.8% Cu Eq and producing an average of over 90ktpa of concentrate. The latter years, 11 to 25, will then utilise the existing decline to access the larger tonnages of medium grade (>0.6% Cu Eq) ore adjacent to the high grade zone, typically within 200 metres laterally of the decline.

The Company has optimised the mine plan in an effort to increase the ability to repay its capital in the early years of the operation increasing the attractiveness of the Project for both debt and equity investors. Table 5 overleaf shows a comparative of the Project LOM metrics and financial outcomes with the first 10 years sub set. The key outcomes show the Project may produce an average of over 22ktpa of Cu and 27kozpa of Au in concentrate for

the first 10 years of operation at a C1 cost (after gold credits) of US\$0.73/lb compared to a LOM average of US\$1.29/ lb. Table 5 overleaf shows the annual net cashflows.

There are significant resources beyond the extent of the Scoping Study mine plan which may provide upside opportunities to assuming extend the mine life additional exploration drilling and corresponding financial studies are successful.



## Annual Net Cashflow (USD millions)

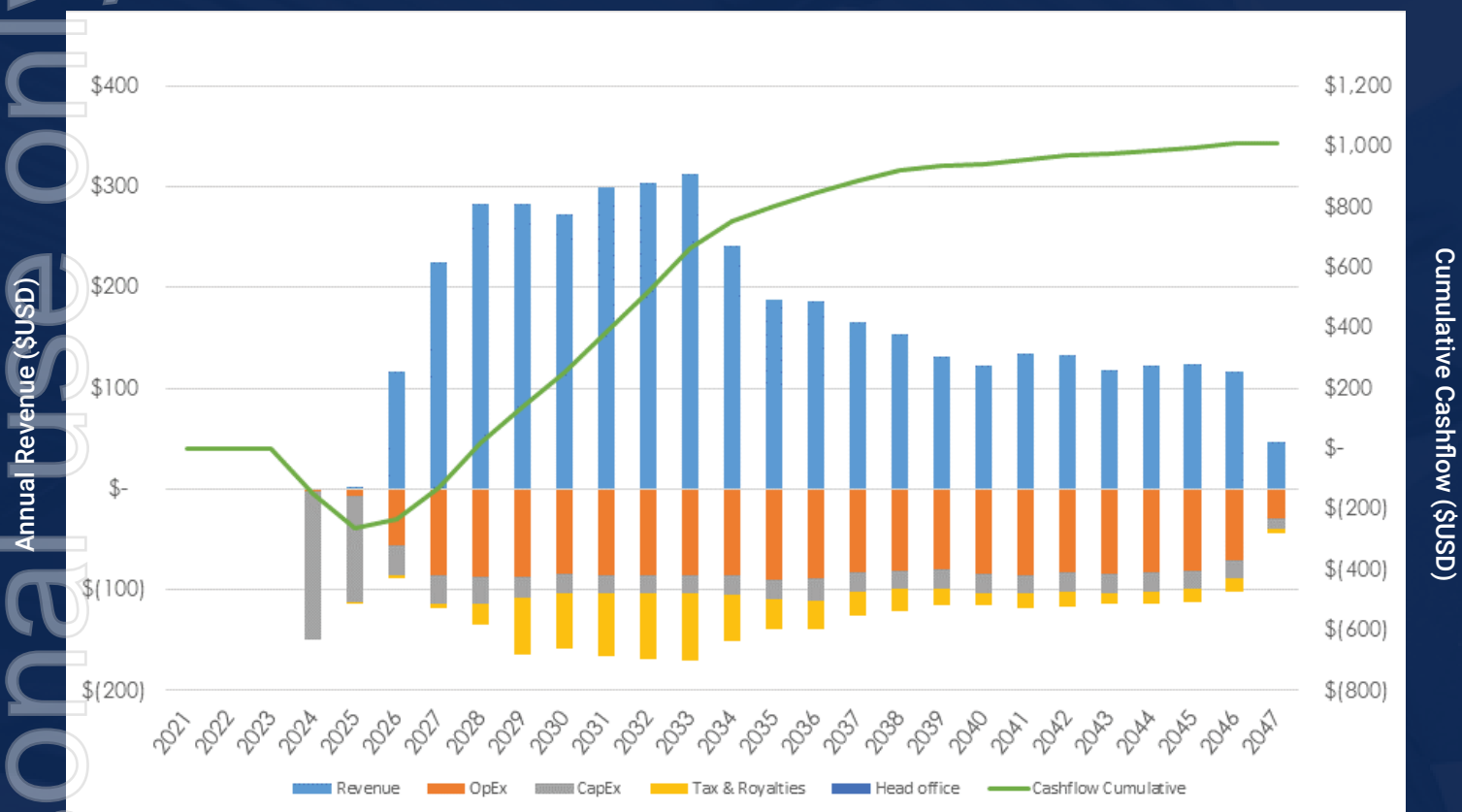


Table 5. Annual Net Cashflow (USD millions)



The summary financial and technical outputs from the LOM and Years 1-10 Cases are presented in Table 6 below:

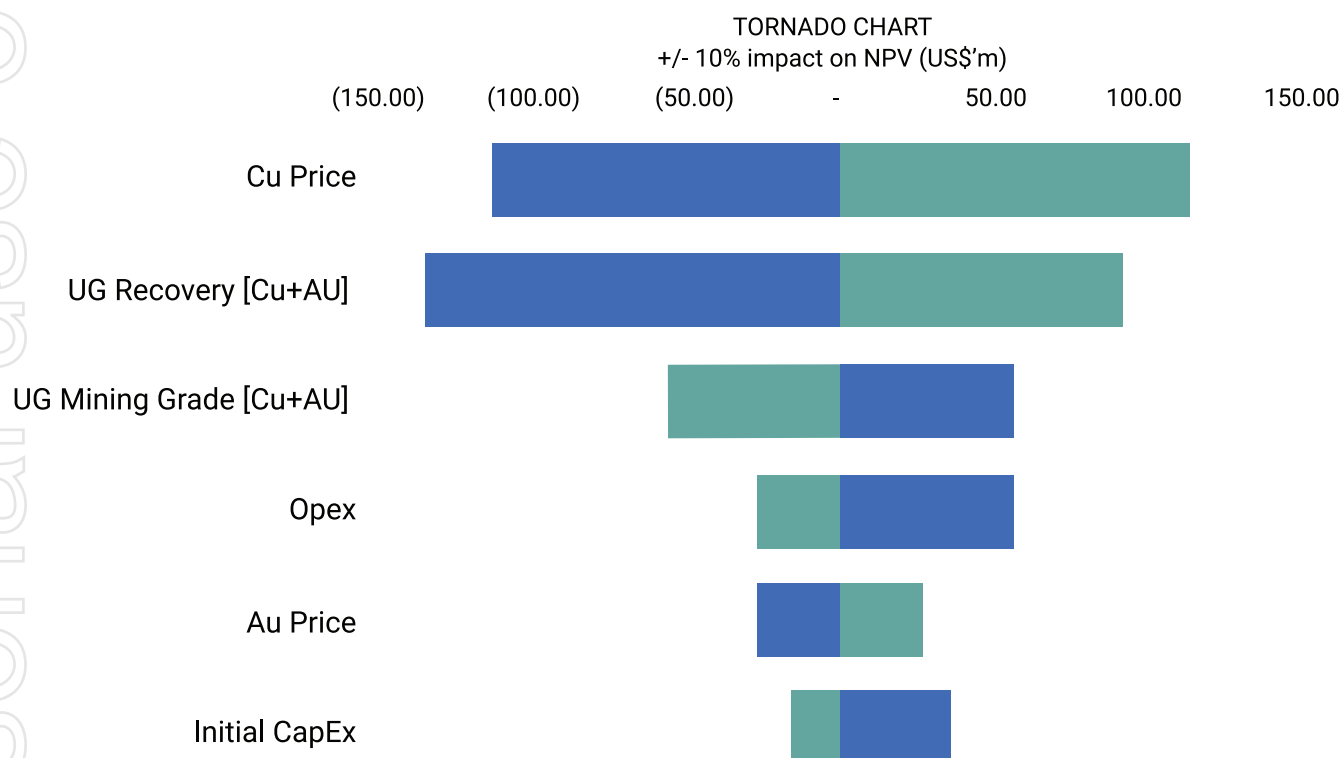
Table 6. Summary of MCB Scoping Study – Key Outcomes

ITEM	PREFERRED CASE FIRST 10 YEARS	PREFERRED CASE LIFE OF MINE
- Ore Mined	20.2Mt	48.8Mt
- Copper grade	1.14%	0.85%
- Gold grade	0.54 g/t	0.41 g/t
- Copper Recovery	94.2%	94.2%
- Gold Recovery	79.0%	79.0%
Mine Life	10	25
Process Plant throughput	2.28Mtpa	2.28Mtpa
Ave Annual Copper production(payable)	22ktpa	16ktpa
Ave Annual Gold production (payable)	27kozpa	19kozpa
Copper Price	US\$ 4.00/lb	US\$ 4.00/lb
Gold Price	US\$1,695/oz	US\$1,695/oz
Initial Capital	US\$253m	US\$253m
NPV (Post-tax, 8% real)	N/A	US\$464m
NPV (Pre-tax, 8% real)	N/A	US\$618m
IRR	N/A	31%
Payback	2.67yrs	2.67yrs
LOM C1 Cost (net by-product credit)	US\$0.73/lb	US\$1.29/lb



The preferred LOM Case generated an after tax NPV<sup>(8%)</sup> of US\$464m with an IRR of 31% and a 2.67yrs payback period. Sensitivity analysis demonstrates that the Project is financially robust and can maintain a positive NPV through stress testing of the various scenarios.

Further work will need to be undertaken with the aim of improving the financial performance of the chosen scenario which will be explored in more detail during subsequent stages of the Project's feasibility analysis. The sensitivity analysis outcomes are presented in the tornado chart below:



*Note +10% change in green and -10% change in blue*

**Table 7. Sensitivity analysis outcomes**

The Preferred Case used an 8% real discount rate. Sensitivity to the discount rate is shown in the table below:

Discount Rate	NPV BASE CASE (post tax)	
	USD	AUD
4.5%	\$660m	\$924m
5%	\$628m	\$880m
8% (Preferred Case)	\$464m	\$650m
10%	\$379m	\$531m

AUD:US FX spot rate of 0.71

**Table 8. Preferred Case at 8% real discount rate, after tax**

# CAPITAL COSTS

Capital cost estimates have been derived to an accuracy of +/-30%, using a typical Scoping Study approach of desktop studies and data cost comparisons provided by the Company's consultants. The estimate for mining CapEx was provided by Mining Plus. The processing plant costs were based on a modularised plant and estimated by BMECS Pty Ltd, with other non-process infrastructure and ancillary costs estimated by the Company's Philippines based technical team.

Underground mining development capital costs over the life of mine have been estimated at USD 333.5m of which USD 22.8m is estimated during the initial pre-production period. Surface sustaining capital costs have been included in the economic analysis at 2.5% per annum of direct costs. The capital costs do not include working capital or cost of financing.

To determine the quantum of the Project's funding requirements a Peak Negative analysis is included in the Financial Model. Peak Negative includes all capital, net operating costs (including revenue during ramp up) and finance fees to the date at which the Project becomes net cash flow positive. The Peak Negative represents the amount of funding required to complete the Project. For this Scoping Study, all funding is assumed to be equity.

Surface sustaining capital costs have been included in the economic analysis at 2.5% per annum of direct costs. The capital costs do not include working capital or cost of financing.

**Table 9. Pre-production Capital Cost Estimate**

	<b>COST</b> in million US\$
<b>UG Mine Development</b>	21.2
<b>Early Works - Site Access</b>	27.6
<b>Admin/ Camp Facilities</b>	18.5
<b>Process &amp; Paste Plant &amp; Site Works</b>	148.4
<b>Mine Surface Site Works</b>	5.0
<b>Water Supply &amp; Treatment</b>	11.5
<b>Owner Costs</b>	21.0
<b>TOTAL</b>	<b>253.1</b>

# OPERATING COSTS

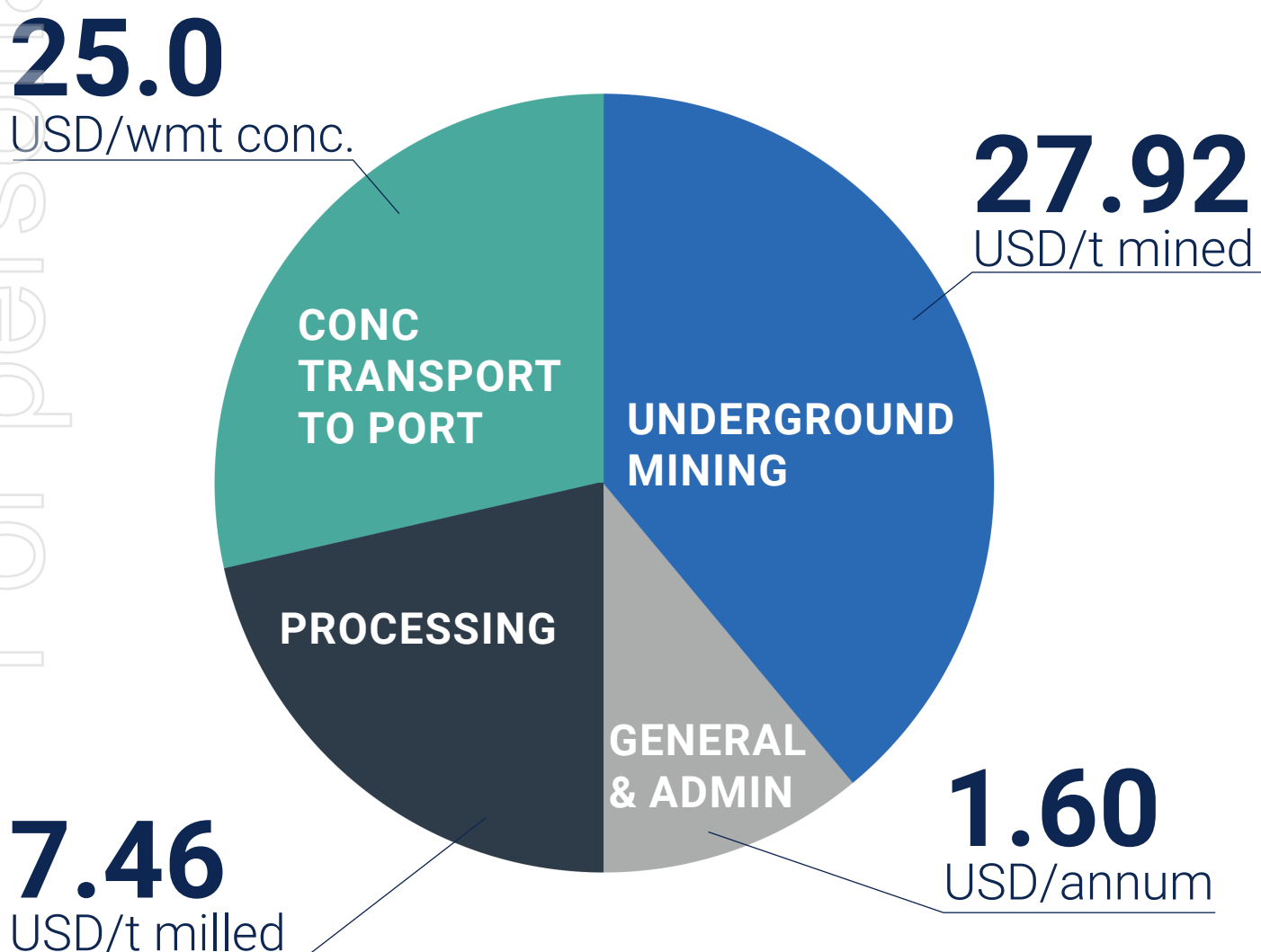
Operating costs estimates have been derived to an accuracy of +/-30%, using a typical Scoping Study approach of desktop studies and data cost comparisons provided by the Company's consultants.

Mining Plus undertook an independent underground mine optimisation evaluation based on a nominal mining rate of 2.28Mtpa. The evaluation utilised their internal cost data base to build up the mine operating costs based on the preferred mine plan. These costs included paste and fill operation.

BMECS undertook an independent analysis of the processing operating costs based on a plant with a throughput range of 2.0Mtpa up to a maximum capacity of 2.4Mtpa.

The Company has estimated site based general & administration costs of US\$1.60m, and concentrate transport costs of US\$25/t conc, based on desktop studies and similar operations in the Philippines.

Table 10. Unit Rate for Operating Costs





# REASONABLE BASIS FOR FUNDING ASSUMPTION

To achieve the range of outcomes indicated in the Scoping Study, pre-production funding in excess of US\$250 million will likely be required. Based on the robust financial outcomes and strong technical fundamentals, the Company believes the Scoping Study provides good support for future financing opportunities via traditional debt and equity markets.

Furthermore, in completing the Scoping Study, Celsius engaged the services of Blackbird Partners, who specialise in structuring and sourcing of project financing in the mining industry.

There are several other factors that will influence the Company's ability to secure project funding, including, but not limited to, securing a mining permit from the Philippine Government, the prevailing market conditions and ability to secure a concentrate offtake agreement.

Whilst no formal funding discussions have commenced the Company has engaged with a number of institutions on the Project and these institutions have expressed a high level of interest in being involved in the funding of the Project.

Typical project development financing would involve a combination of debt, offtake finance and equity. The Company has formed the view that there is a reasonable basis to believe that requisite future funding for development of the Project will be available when required. There are a number of grounds on which this reasonable basis is established:

- International debt and equity finance availability for high-quality copper and base metal projects around the globe remains robust. Recent examples of significant funding being made available for progression or construction of such projects internationally include:
  - Mineracao Vale Verde achieving a US\$140m of senior debt funding (2021) for its Serrote Copper Gold project in Brazil.
  - Mantos Copper Holdings achieving a US\$847m funding package (2021) which included US\$520m project debt facility, for its Mantoverde Sulphide Development Project located in Chile.
  - Ivanhoe Mines achieving US\$420m project level credit facilities (2020) for its Kamoa-Kakula Copper Project in the Democratic Republic of Congo.

- Cupric Canyon Capital achieving a US\$650m funding package (2019) for its Khoemacau Copper project in Botswana.
- Western Copper and Gold attracting a C\$25.6m strategic equity investment (2021) from Rio Tinto to part fund the Casino Copper Gold Project's feasibility study.
- Hot Chili Ltd attracting an A\$14.4m strategic equity investment (2021) and associated offtake agreement from Glencore to support the completion of a feasibility study and development of the Costa Fuego copper gold project in Chile.

The technical and financial parameters detailed in the MCB Project's Scoping Study are robust and economically attractive with an US\$464m NPV<sup>(8%)</sup> (post-tax, ungeared, real basis) and 31% IRR (assuming US\$4/lb Cu & US\$1,695/oz Au). In addition, the focus of the mine plan on higher copper and gold grades in the first 10 years generates significant cashflow, which are expected to be highly attractive to potential debt financiers.

The Company's Board and management team has extensive experience in the Philippine mining sector and the broader resources industry. They have played leading roles previously in the exploration, development and operation of mines globally. This includes project financing of several large and diverse mining projects.

It should be noted that this funding strategy is subject to change at the Celsius Board's discretion at any point. It should also be noted that, while the Company's Board holds a reasonable basis to believe that funding will be available as required, there is no assurance that the requisite funding for the MCB Project will be secured.



# PRODUCT MARKETABILITY

A multi-element concentrate analysis was undertaken on samples from the metallurgical test work program (see Appendix 1). The results were supplied to smelters and commodity brokers to test the marketability of the product and preliminary responses from various international copper traders all indicated that the cleanliness and the presence of precious metals in MCB's copper concentrate make it highly marketable. Additionally, they have indicated that the sulphur content is an attractive element for any smelter while the geographic advantages of the MCB Project to the Asian smelters is a positive, not only in terms of short delivery times and freight costs but also in terms of reduced finance costs.

# SOCIAL, ENVIRONMENTAL AND PERMITTING

To gain exclusive rights to conduct mining operations and extract minerals within the MCB tenement, MMCI may enter into either a Mineral Production Agreement (MPSA) or a Financial and Technical Assistance Agreement (FTAA) with the Philippine Government. A key requirement for approval of any of these agreements is a Declaration of Mining Project Feasibility (DMPF), supported by an Environmental Compliance Certificate and Free and Prior Informed Consent among others.

Either agreement, if approved, grants the Company a term not exceeding twenty-five (25) years starting from the execution thereof, renewable for not more than twenty-five (25) years under such terms and conditions as may be provided by law.

As the Project is situated within the Ancestral Domain of the Balatoc Indigenous Cultural Community (ICC), a Certification Precondition from the National Commission on Indigenous People needs to be secured attesting that a Free Prior and Informed Consent Process (FPIC) has been obtained from the ICC in accordance with the Philippine Mining Act and the Indigenous Peoples Right Act (IPRA).

Ground investigations indicate that the development of the MCB Project will not cause any physical or economic displacement that will necessitate the need for resettlement and livelihood restoration. Among the key considerations in determining the mine facilities' location is the avoidance of any existing structures (residential or non-residential) and farm areas or any site features that may have social, cultural, and economic significance to the local community. Onsite and offsite road alignments also consider utilisation and improvement of existing barangay, municipal and/or provincial roads in conjunction with the concerned local government units.



## Additional ESG Commitments

The Company is also committed to the independent verification process offered by Digbee ESG. This will empower the CLA to provide a roadmap of ongoing commitments across the full spectrum of ESG, and in particular to address the United Nations Sustainable Development Goals ("UN SDG"). The Digbee ESG platform is aligned to global ESG reporting standards, with the UN SDG's and Global Compact an important central theme.

## EXPLORATION UPSIDE

Significant potential has been identified to expand the MCB resource along strike and down dip. Wide spaced drilling to the east of the high-grade core has identified broad zones of low-grade mineralisation  $> 0.2\%$  Cu, but within these areas there remains a number of historical high-grade intersections  $> 1.0\%$  Cu, and infill drilling is currently planned to follow up a number of these to explore for additional areas of continuous high-grade mineralisation.

In addition, there are only two drill holes located west of the high-grade zone where further drilling is required to test the potential west of an interpreted fault, which currently limits the extent of the resource. The resource is only limited at depth by the current drilling and holes are planned to test extensions below the base of the current resource.

# RISKS AND OPPORTUNITIES

A number of key Risks and Opportunities were identified by the Company and its consultants during the Scoping Study. These will form critical areas of study during the ensuing feasibility studies

**Resource** – there are potential risks which could arise based on inadequate geological interpretation while there are also ample opportunities to increase the resource and potentially extend the high grade zones of mineralisation.

**Geotechnical** – the key geotechnical risk arises from potential ground surface instability, work is under way on a risk mitigation strategy. Further underground geotechnical studies are also planned during the feasibility stage.

**Metallurgy** – the metallurgy is considered low risk and there remains further opportunities to optimise recoveries.

**Infrastructure** – the local government is currently considering upgrading the access road to the mine site which may provide an opportunity to reduce the costs to the Company. Furthermore, there is the potential for the mine to source its future power supply from local “green” energy sources generated from proposed geothermal and hydrothermal power plant projects in the municipality of Pasil.

**Tenure** – Although the Company holds a valid exploration permit, there is no guarantee that the Company will be successful in securing mining title, either in the form of an FTAA or an MPSA.

**Commodity Prices** – although the current consensus market outlooks are positive for copper and gold, commodity price variation will always remain a key risk to the Projects financial outcomes.

## KEY ASSUMPTIONS

The key assumptions which underpin the technical and financial outcomes of the Scoping Study are included in Table 1. For additional assumptions relating to Resource, Mining and Processing please refer to the relevant sections in the text of this release.

## NEXT STEPS

Based on the robust financial and technical outcomes of the Study, the Board of Celsius has elected to immediately embark on the necessary work streams to convert the current EP to a Mining Title.

This work will include the submission of requirements for the Declaration of Mining Project Feasibility (“DMPF”) in line with the relevant Philippine national government guidelines.

Furthermore, the Company will immediately commence optimisation and trade off studies to augment core elements of the project, with a particular focus on mining and processing.

It is also planned to undertake additional infill drilling programs for the purpose of Mineral Resource definition. This drilling will also provide additional samples for ongoing metallurgical test work.

# APPENDIX 1

## Results of the Multi-element Concentrate Analysis

MCB Concentrate Analysis	Target Limits	MCB Assay Results
<b>Copper (Cu)</b>	25 - 29%	25.80%
<b>Gold (Au)</b>	3 - 12 g/dmt	7.93 g/t
<b>Silver (Ag)</b>	10 - 40 g/dmt	53 g/t
<b>Iron (Fe)</b>	20 - 35%	27.40%
<b>Sulfur (S)</b>	20 - 35%	31.60%
<b>Zinc (Zn)</b>	< 3.0%	0.19%
<b>Lead (Pb)</b>	< 1.0%	0.02%
<b>Arsenic (As)</b>	< 0.2%	0.01%
<b>Antimony (Sb)</b>	< 0.1%	0.0008%
<b>Molybdenum (Mo)</b>	N/A	335 ppm
<b>Mercury (Hg)</b>	< 10 ppm	0.3 ppm
<b>Bismuth (Bi)</b>	< 0.05%	< 0.002%





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