

## Elizabeth Creek Scoping Nearing Completion, Final Process Work Underway

*Identification of new selective leaching process has the potential to optimise final product streams and capital efficiency, with additional test work now underway.*

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### Highlights

- Key Scoping Study inputs from mining to concentrate now materially completed.
- Underground mine schedule undergoing final optimisation, with no material changes to mining methods and volumes.
- Front-end processing studies complete, with Albion Process expected to form the base case downstream process.
- Downstream optimisation underway, following recent identification of the NONOX non-oxidative leaching process.
- The NONOX process is designed to deliver an upgraded copper- silver concentrate, battery-grade cobalt sulphate and zinc carbonate end-products, positioning each product at the optimal point in the value chain.
- This would enhance capital efficiency delivering highly attractive, critical minerals focused products.
- Final test work now underway, with the overall Scoping Study expected to be finalised by late Q1 2023 for expected delivery to the market in April 2023.

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### Operational Update

- Ambient Noise Tomography (ANT) survey is continuing at Emmie Bluff, covering the Emmie IOCG copper-gold discovery and the Emmie Bluff copper-cobalt deposits.
- Gravity survey at Emmie Bluff expected to commence in late March 2023.
- Review of Cameron River assays results in progress.

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Coda Minerals Limited (**ASX: COD, “Coda”, or “the Company”**) is pleased to provide an update on recent progress on the Scoping Study for the copper-cobalt Resources at its 100%-owned Elizabeth Creek Copper Project in South Australia, including some important new developments with the process plant flowsheet design.

### Study Progress

The Company has now completed work to assess all material inputs into the upcoming Scoping Study up to the point of production of a copper-cobalt concentrate from a centrally located on-site flotation plant. These studies cover the full project scope from mining, processing and transportation through to non-process infrastructure, as well as preliminary environmental and hydrogeological assessment. The part of the Scoping Study relating to the downstream processing of concentrate to final saleable products remains subject to a series of trade-off studies relating to multiple processing options.





## Mining Study

In November 2022 the Company announced the culmination of Mining Study work confirming a technically viable pathway to a steady-state 2.5 million tonnes per annum of production from the Elizabeth Creek Project. The mine plan utilises conventional drill-and-blast techniques and an industry-standard mining fleet with flat Long-hole Open Stopping with Pillars selected as the optimal mining method for the underground Emmie Bluff copper-cobalt deposit.

Open pit studies undertaken at the same time as the underground study work proposed open pit extraction of the satellite MG14 and Windabout deposits and will allow the operation to rapidly achieve nameplate metal production during the development and ramp-up of the Emmie Bluff Underground Mine.

## Processing – Crusher to Concentrate

Coda's long history with the Elizabeth Creek Project has allowed for a rapid development of the floatation portion of the processing flowsheet, giving it the ability to focus on optimising the final part of the process –the opportunity to deliver a final product on-site from the concentrate produced.

As announced on 5 July 2022<sup>1</sup>, Coda has completed all front-end work, resulting in exceptional recoveries to concentrate, especially in the case of cobalt which achieved a 90% recovery to concentrate. Further to that announcement, noting approximately 99% of cobalt and 99.6% of copper can be extracted from concentrate, Coda currently expects that the Albion processing technology will form the base case for downstream processing.

## Processing- Downstream Optimisation

To date, all downstream processing options assessed by Coda, including the Albion Process™, have been designed to produce final, saleable products from the intermediate copper-cobalt-silver-zinc concentrate produced in the flotation plant, specifically copper cathode, battery-grade cobalt sulphate, silver dore, and zinc carbonate. **(Please see Figure 1 below for detailed diagram of flowsheet options).**

In late 2022, Coda identified a non-oxidative leaching process called NONOX. NONOX is unique amongst Coda's assessed options in that it selectively leaches certain metals, potentially allowing the Company to produce a highly capital-efficient product mix of battery-grade cobalt sulphate, zinc carbonate as well as a separate stream of highly enriched copper-silver concentrate.

This process is considered optimal as it provides maximum value uplift for achieving a highly saleable cobalt end-product while removing capital items required to upgrade copper-concentrate to copper cathode and silver dore on site.

Moreover, the copper-silver concentrate produced during the NONOX process is upgraded relative to the original material and has many of its impurities removed, resulting in lower transport costs and high smelter returns. NONOX is currently in use in the PGM industry in Africa and in nickel processing in Europe, amongst other operations around the world.

Work by independent consultants into the applicability of the NONOX Process to Elizabeth Creek material is nearing the final stages, after which all material inputs to the study will have been finalised, and a downstream option can be selected to take forward as the base case for pre-feasibility level study work.

Commenting on the Scoping Study progress, Coda CEO Chris Stevens said: *"The completion of the Scoping Study will mark the culmination of an enormous amount of work on the mining and metallurgy of the Elizabeth Creek Project. Although often considered high-level in nature, a Scoping Study also needs to set out a robust base case encompassing the optimum combination of options to be taken forward into a Pre-Feasibility Study.*

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<sup>1</sup> For full details including JORC Table 1, please see ">99% Recoveries of Cu, Co from Emmie Bluff Concentrate Using Albion Process™", available at [https://www.codaminerals.com/wp-content/uploads/2022/07/20220705\\_Coda\\_ASX-ANN\\_99-Recoveries-of-Cu-Co-from-Emmie-Bluff-Concentrate\\_RELEASE.pdf](https://www.codaminerals.com/wp-content/uploads/2022/07/20220705_Coda_ASX-ANN_99-Recoveries-of-Cu-Co-from-Emmie-Bluff-Concentrate_RELEASE.pdf)

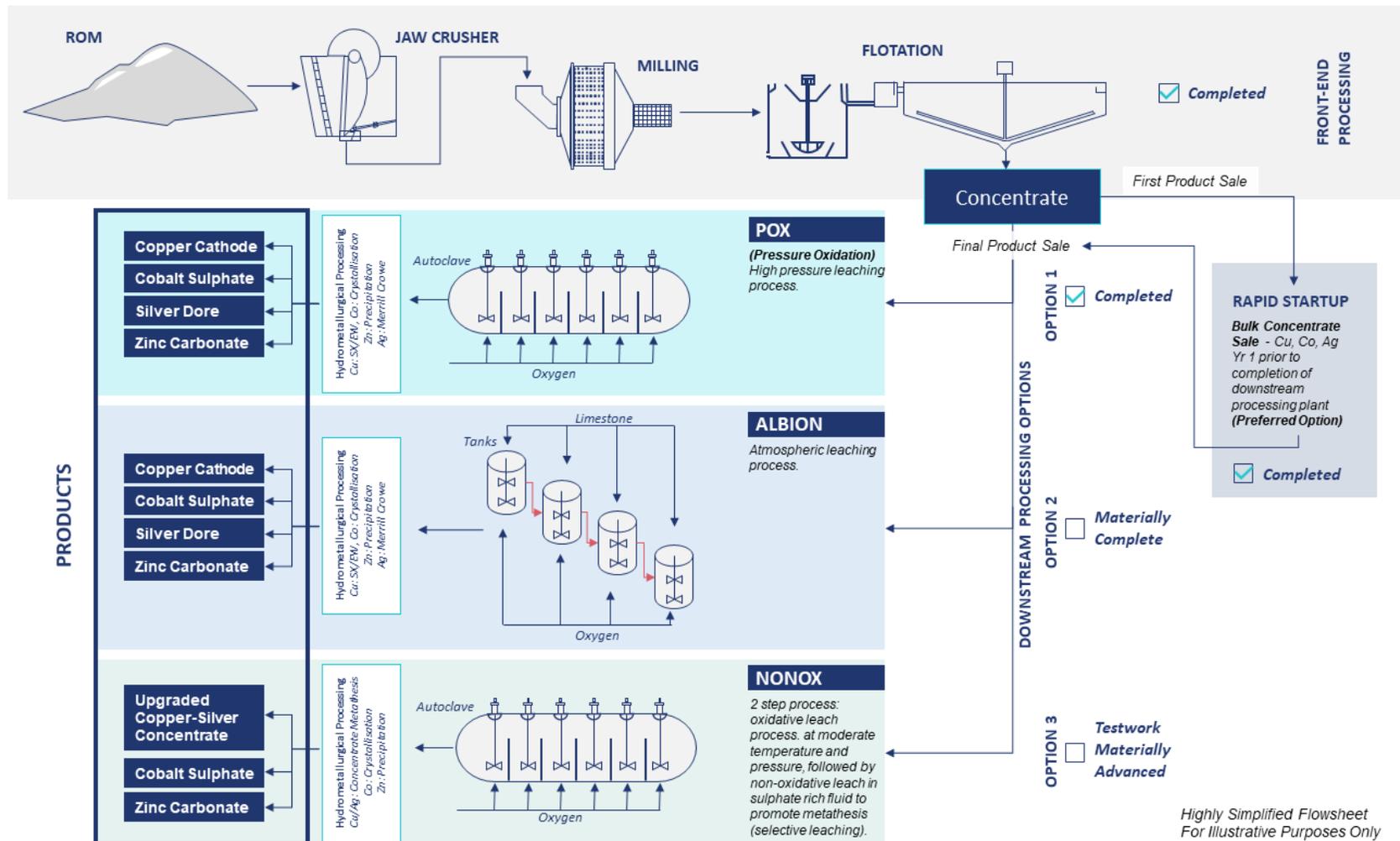




*“With the vast majority of the mining and metallurgy work, as well as all ancillary inputs, now complete, we are making excellent progress with the final stages of the study.*

*“The work still to be completed relates to one of the project’s greatest strengths – the amenability of cobalt to high recoveries and processing to deliver valuable battery-grade end-products on site. With all but one of the trade-off studies now complete, we expect to finalise this work very shortly and look forward to completing the study towards to the end of the current quarter with the results likely to be presented to the market in April 2023.”*





Highly Simplified Flowsheet  
For Illustrative Purposes Only

Figure 1: Simplified flowsheet showing completed work and downstream metallurgical options.





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This announcement has been authorised for release by the Board of Coda Minerals Ltd

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## About Coda Minerals

**Coda Minerals Limited** (ASX: COD) is focused on the discovery and development of minerals that are leveraged to the global energy transformation through electrification and the adoption of renewable energy technologies.

Coda's flagship asset is the 100%-owned Elizabeth Creek Copper-Cobalt Project, located in the world-class Olympic Copper Province in the Eastern Gawler Craton, South Australia's most productive copper belt. Elizabeth Creek is centred 100km south of BHP's Olympic Dam copper-gold-uranium mine, 15km from its new Oak Dam West Project and 50km west of OZ Minerals' Carrapateena copper-gold project.

Coda consolidated 100% ownership of the Elizabeth Creek Copper Project after completing the acquisition of its former joint venture partner, Torrens Mining, in the first half of 2022.

In December 2021, Coda announced a maiden Indicated and Inferred Mineral Resource Estimate for the Emmie Bluff copper-cobalt deposit at Elizabeth Creek comprising 43Mt @ 1.3% copper, 470ppm cobalt, 11g/t silver and 0.15% zinc (1.84% CuEq) containing approximately 560kt copper, 20kt cobalt, 15.5Moz silver and 66kt zinc (800kt CuEq)<sup>2</sup>. Importantly, 92% of the contained metal is classified in the higher confidence 'Indicated Resource' category and is available for use in mining studies.

Emmie Bluff is one of three known 'Zambian-style' copper-cobalt deposits at Elizabeth Creek, including JORC 2012 compliant Indicated Mineral Resources at the Windabout (18Mt @ 1.14% CuEq) and MG14 (1.8Mt @ 1.67% CuEq) deposits<sup>3</sup>. Collectively, the three resources at Elizabeth Creek now host a total of 1.1 million tonnes of contained copper equivalent<sup>2,3</sup>.

Coda has also discovered a significant IOCG system adjacent to and below the Emmie Bluff target, with initial deep diamond drilling in June 2021 intersecting 200m of intense IOCG alteration at the Emmie IOCG target, including approximately 50m of copper sulphide mineralisation<sup>4</sup>. Since then, Coda has drilled 21 holes into Emmie IOCG, with all but three returning significant widths of mineralisation, some over 3% copper and 0.5g/t gold<sup>5</sup>.

<sup>2</sup> 2021.12.20 - [Standout 43Mt Maiden Cu-Co Resource at Emmie Bluff](#), Competent Person: Dr Michael Cunningham.

<sup>3</sup> 2020.10.26 - [Confirmation Statements JORC](#), Competent Person: Tim Callaghan.

<sup>4</sup> 2021.06.22 - [Thick Zone of IOCG Mineralisation Intersected at Emmie Bluff Deeps](#), Competent Person: Mr Matthew Weber.

<sup>5</sup> 2022.09.18 - [Assays from IOCG Drilling Confirm Target Areas for Follow Up](https://www.codaminerals.com/wp-content/uploads/2021/06/20210622_Coda_ASX-ANN_Emmie-Bluff-Deeps-IOCG-Mineralisation-Additional-Information_RELEASE.pdf)[https://www.codaminerals.com/wp-content/uploads/2021/06/20210622\\_Coda\\_ASX-ANN\\_Emmie-Bluff-Deeps-IOCG-Mineralisation-Additional-Information\\_RELEASE.pdf](https://www.codaminerals.com/wp-content/uploads/2021/06/20210622_Coda_ASX-ANN_Emmie-Bluff-Deeps-IOCG-Mineralisation-Additional-Information_RELEASE.pdf), Competent Person: Mr Matthew Weber.





Coda has a dual strategy for success at Elizabeth Creek. Firstly, it is working towards a Scoping Study to determine the economic potential of the known sediment-hosted Mineral Resources on the tenure, while simultaneously undertaking exploration to further define and extend known Zambian-style copper-cobalt resources across multiple prospects.

Secondly, it is undertaking a substantial geophysics programme at the Emmie IOCG prospect to further understand the structures and extent of the geological model defined over the past year of drilling.

Coda also has a Farm-In and Joint Venture Agreement with Wilgus Investments Pty Ltd to acquire up to 80% ownership of the Cameron River Copper-Gold Project, located in the highly prospective Mount Isa Inlier in Queensland. The Project comprises 35km<sup>2</sup> of copper and gold exploration tenure spanning two Exploration Permits (EPMs 27042 and 27053).

Through Torrens Mining acquisition, Coda also owns exploration tenements in Victoria, New South Wales and Papua New Guinea.

### Competent Persons' Statements and Confirmatory Statement - Mineral Resource Estimates

Information regarding the MG14 and Windabout Mineral Resources is extracted from the report entitled "Confirmation Statements JORC" created on 26<sup>th</sup> October 2020 and is available to view at [https://www.codaminerals.com/wp-content/uploads/2020/10/20201026\\_Coda\\_ASX-ANN\\_Confirmation-Statements-JORC.pdf](https://www.codaminerals.com/wp-content/uploads/2020/10/20201026_Coda_ASX-ANN_Confirmation-Statements-JORC.pdf).

Information regarding the Company's MG14 and Windabout Mineral Resource Estimates is based on, and fairly represents, information and supporting documentation compiled by Tim Callaghan, who is self-employed. Mr Callaghan is a Member of the Australasian Institute of Mining and Metallurgy ("AusIMM"), and has a minimum of five years' 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' ("JORC Code"). Mr Callaghan has consented to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Information regarding the Emmie Bluff Mineral Resource is extracted from the report entitled "Standout 43Mt Maiden Cu-Co Resource at Emmie Bluff" created on 20<sup>th</sup> December 2021 and is available to view at [https://www.codaminerals.com/wp-content/uploads/2021/12/20211220\\_Coda\\_ASX-ANN\\_Standout-43Mt-Maiden-Cu-Co-Resource-at-Emmie-Bluff\\_RELEASE.pdf](https://www.codaminerals.com/wp-content/uploads/2021/12/20211220_Coda_ASX-ANN_Standout-43Mt-Maiden-Cu-Co-Resource-at-Emmie-Bluff_RELEASE.pdf)

Information regarding the Company's Emmie Bluff Mineral Resource Estimates is based on, and fairly represents work done by Dr Michael Cunningham of Sonny Consulting Services Pty Ltd. Dr Cunningham is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

### Statement Regarding Metal Equivalent Calculations

Metal Equivalent grades are quoted for one or more of the Emmie Bluff, Windabout and MG14 Mineral Resources, or for exploration results considered by the company to be related directly to one of these Mineral Resources, in this announcement.



### For the Emmie Bluff Mineral Resource:

The Emmie Bluff Mineral Resource is reported as 43Mt @ 1.3% Cu, 470 ppm Co, 11 g/t Ag and 0.15% Zn (1.84% Copper Equivalent (CuEq)) reported at a cut-off grade of 1% CuEq. The calculation of this metal equivalent is based on the following assumptions.

Metal	Coefficient	Forecast Price	Price Unit
Copper	0.8	\$7,000	USD/Tonne
Cobalt	0.85	\$55,000	USD/Tonne
Zinc	0.9	\$2,100	USD/Tonne
Silver	0.85	\$18.50	USD/Oz

Price assumptions used when calculating copper equivalent grades were based primarily on Consensus Economics forecasts of metals, except for Cobalt, which was sourced via communication with subject matter experts. Metallurgical assumptions used when calculating copper equivalent grades were based on a simple bulk float utilising rougher and minimal cleaner/scavenger circuits. The produced a reasonably consistent mean recovery across most metals of between approximately 83 and 94 percent. For simplicity, and to in part account for losses associated with less intensive cleaner floats and losses to the hydromet plant, these figures were rounded down to the nearest 5%.

Application of these assumptions resulted in the following calculation of CuEq:

$$CuEq\% = Cu\% + 0.00068 \times Co \text{ ppm} + 0.337 \times Zn \% + 90.3 \times \frac{Ag \text{ ppm}}{10000}$$

### For the Windabout and MG14 Mineral Resource:

The Windabout and MG14 Mineral Resource are reported at a cut-off grade of 0.5% CuEq as:

- **Windabout:** 17.67Mt @ 0.77% Cu, 492 ppm Co and 8 g/t Ag (1.41% CuEq)
- **MG14:** 1.83Mt @ 1.24% Cu, 334 ppm Co and 14 g/t Ag (1.84% CuEq)

The calculation of this metal equivalent is based on the following assumptions.

Metal	Mining Recovery %	Dilution %	Recovery %	Payability %	Forecast Price	Price Unit
Copper	0.9	0.05	0.6	0.7	\$6,600	USD/Tonne
Cobalt	0.9	0.05	0.85	0.75	\$55,000	USD/Tonne

Price assumptions used when calculating copper equivalent grades were based on recent historical metal prices at the time of calculation (2018). Metallurgical assumptions are based on extensive metallurgical testwork undertaken on the two deposits to 2018 across various potential flowsheets involving both floatation and leaching. Ag analyses in the estimation and metallurgical testwork were considered insufficient at the time to include in the metal equivalent calculation.

Application of these assumptions resulted in the following calculation of CuEq:

$$CuEq\% = Cu\% + 0.0012 \times Co \text{ ppm}$$

It is the opinion of the company that both sets of prices used in the calculations are reasonable to conservative long-term forecasts for real dollar metal prices during the years most relevant to the deposits (approx. 2026-2030).

It is the opinion of the company that all of the elements included in the metal equivalent calculations have a reasonable potential to be recovered and sold.

For full details of the Emmie Bluff Metal Equivalent calculation, please see "Standout 43Mt Maiden Cu-Co Resource at Emmie Bluff", released to the ASX on 20<sup>th</sup> December 2021 and available at [https://www.codaminerals.com/wp-content/uploads/2021/12/20211220\\_Coda\\_ASX-ANN\\_Standout-43Mt-Maiden-Cu-Co-Resource-at-Emmie-Bluff\\_RELEASE.pdf](https://www.codaminerals.com/wp-content/uploads/2021/12/20211220_Coda_ASX-ANN_Standout-43Mt-Maiden-Cu-Co-Resource-at-Emmie-Bluff_RELEASE.pdf). For full details of the MG14/Windabout Metal Equivalent Calculation, please see "Confirmation of Exploration Target & Mineral Resource and Ore Reserve Statement", released to the ASX on 23<sup>rd</sup> October 2020 and available at [https://www.codaminerals.com/wp-content/uploads/2020/10/20201026\\_Coda\\_ASX-ANN\\_Confirmation-Statements-JORC.pdf](https://www.codaminerals.com/wp-content/uploads/2020/10/20201026_Coda_ASX-ANN_Confirmation-Statements-JORC.pdf).

## Forward Looking Statements

This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other





things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

