

## ASX ANNOUNCEMENT

20 August 2015

## Boost for Tasmanian tin mine as Cleveland Open Pit study adds \$21m to cash flow

*This announcement should be read in conjunction with the attached Cautionary Statements and Appendix.*

Elementos Limited (ASX: ELT) ("Elementos" or the "Company") is pleased to announce the results of an independent Open Pit Scoping Study, which is the second stage of its three-stage development of the Cleveland tin-copper-tungsten mine, located in north-west Tasmania, Australia.

Production from the stage 2 high-grade open-pit mine is scheduled to start in FY2018, supplementing production from the stage 1 tin-copper tailings reprocessing operation, which is expected to commence operation in FY2017.

### Highlights

- Financially robust and technically low-risk project.
- Mining inventory<sup>1</sup> of 600,000 tonnes at 0.50% tin (Sn) and 0.14% copper (Cu).
- Over 98% of the ore tonnes included in the mining inventory are in the Indicated Mineral Resource category.
- Five pits, with an average **stripping ratio of 5.1**, will be mined at a combined rate of 200,000 tonnes per year over 3 years.
- The incremental capital cost is estimated at A\$6.6 million, comprising A\$5.6 million for plant upgrades and A\$1.0 million for site works and pre-production waste stripping.
- The capital requirements are fully funded by cash flow from stage 1 and, as such, **stage 2 will not require external financing**.
- The projected additional cash flow from the open-pit project is A\$21 million (before tax)<sup>2</sup>.
- **The project is cash flow positive at current tin and copper prices** (2015 average price of US\$16,657 per tonne tin and US\$5,780 per tonne copper).
- The net direct cash cost (C1) of US\$8,303 per recovered tonne of tin places the project in the bottom half of the industry cost curve.

<sup>1</sup> A mining inventory is not an Ore Reserve. Refer to Cautionary Statements attached to this announcement.

<sup>2</sup> Pricing and Exchange Rate assumptions independently sourced from Roskill, *Roskill Market Outlook Report; Tin*, ninth edition, 2015 premium version, April 2015

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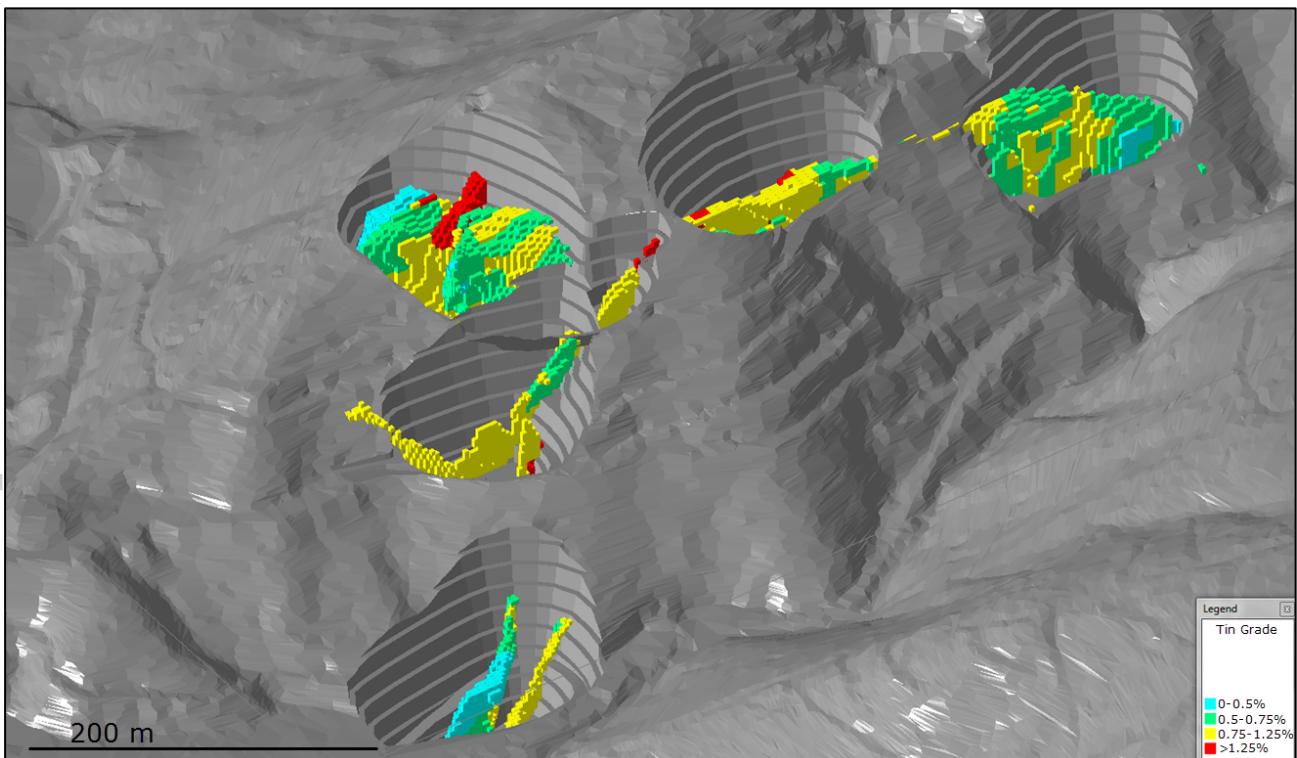
Elementos is developing the Cleveland Project through a staged, low-capital development strategy, which minimises upfront capital, with cash flow funding future stages. This ensures maximum benefit from capital expenditure, delivering optimal value to shareholders.

Cleveland development strategy				
Stage	Project	Commodities	Status (August 2015)	Production commences <sup>a</sup>
1	Cleveland Tailings	Sn-Cu	Pre-feasibility completed	FY2017
2	Cleveland Open Pit	Sn-Cu	Scoping study completed	FY2018
3	Cleveland Underground	Sn-Cu-W	Scoping study in progress	FY2021

<sup>a</sup> Subject to completion of technical studies and obtaining necessary approvals.  
 Sn = tin, Cu = copper, W = tungsten.

The Cleveland Open Pit Scoping Study, independently reported by leading consultancy AMC Consultants Pty Ltd (AMC), was based on the previously announced Mineral Resource<sup>3</sup> of 0.8 million tonnes (Mt) at 0.81% Sn and 0.27% Cu.

The AMC study identified five viable open pits, containing a mining inventory<sup>1</sup> of 0.6 Mt at 0.50% Sn and 0.14% Cu. The open pit will supplement the feed from the proposed tailings reprocessing operation, providing additional high-grade feed into the upgraded process plant.



<sup>3</sup> Refer to announcement to the ASX on 17 June 2014, "Cleveland Tailings Resource Upgrade", available <<http://www.asx.com.au/asx/statistics/announcements.do>>, ASX code "ELT".

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In addition to being a financially robust and technically low-risk project, the Cleveland Project offers many advantages over tin projects at a similar stage of development. In particular, **the region has excellent infrastructure, with power, water, and communications already on site.** All-weather roads transect the lease area, providing excellent access to ports and a skilled labour market. And, compared with other tin provinces around the world, Tasmania offers a stable and well-understood regulatory environment and encouraging state government.

**The support of key government and community stakeholders results from the project's expected positive economic, social and environmental impacts.** Notably, the project area has been heavily disturbed by historical mining, and environmental studies of the project area have identified residual environmental impacts from this earlier mining activity. The positive environmental impacts of the project result from the works proposed to remediate these residual impacts.

**Elementos CEO Tim McManus said,** "Following our recent, positive announcements on development of the stage 1 Cleveland Tailings Project, the stage 2 open-pit operation is expected to increase the before tax cash flow by over 37%. As such, this study provides a strong endorsement of our staged development strategy for the Cleveland deposits. Work is also continuing on the stage 3 underground operation, which has the potential to significantly expand the project cash flow and mine life."

Mr McManus also commented, "Considering that the technical studies of the Cleveland deposits have been based only on the validated work of the previous mine operator, we are very confident that there is **considerable exploration upside** at Cleveland. When you consider the proven viability of tailings reprocessing and open pit mining, the exploration upside, the proximity of infrastructure, and positive environmental impacts, we believe Cleveland is a realistic, near-term, production asset and is well down the road to becoming a globally significant tin-copper-tungsten producer."

For more information, please contact:

**Tim McManus**

Chief Executive Officer

Phone: +61 7 3221 7770

Email: [admin@elementos.com](mailto:admin@elementos.com)

Elementos is an Australian, ASX-listed metals company, focused on the staged, low cost development of Cleveland, an advanced stage tin-copper and tungsten project in Tasmania.

Please visit us at: [www.elementos.com.au](http://www.elementos.com.au)

## CAUTIONARY STATEMENTS

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Elementos has concluded it has a reasonable basis for providing the forward-looking statements included in this announcement. The detailed reasons for that conclusion are outlined throughout this announcement and the attached Appendix.

### Forward-looking statements

This document may contain certain forward-looking statements. Such statements are only predictions, based on certain assumptions and involve known and unknown risks, uncertainties and other factors, many of which are beyond the company's control. Actual events or results may differ materially from the events or results expected or implied in any forward-looking statement.

The inclusion of such statements should not be regarded as a representation, warranty or prediction with respect to the accuracy of the underlying assumptions or that any forward-looking statements will be or are likely to be fulfilled.

Elementos undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date of this document (subject to securities exchange disclosure requirements).

The information in this document does not take into account the objectives, financial situation or particular needs of any person or organisation. Nothing contained in this document constitutes investment, legal, tax or other advice.

### Mineral Resource

Elementos confirms that Mineral Resource estimates used in this document were estimated, reported and reviewed in accordance with the guidelines of the Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code) 2012 edition.

Elementos confirms that it is not aware of any new information or data that materially affects the information included in the "Cleveland Open Pit - High-Grade Mineral Resource Defined" released on 3 March 2015 and that all material assumptions and technical parameters underpinning the estimates in the Cleveland Open Pit Mineral Resource continue to apply and have not materially changed. Elementos also confirms the form and context in which the Competent Person's findings are presented have not been materially modified from the 3 March 2015 announcement.

### No Ore Reserve has been determined

The scoping study referred to in this announcement is based on a low-level technical and economic assessment, which is insufficient to support estimation of Ore Reserves, or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the scoping study will be realised.

Elementos advises that the scoping study results are partly drawn from Inferred Resources, which comprise less than 2% of the total resource tonnes and less than 1% of the tin-copper metal in the mining inventory. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the conversion of Inferred Mineral Resources to Indicated Mineral Resources or that the production target itself will be realised.

The term "mining inventory" is used to describe the Indicated and Inferred Mineral Resource within the pit design. Whereas an Ore Reserve, as defined by the JORC code (2012 Edition), must be based on a study at pre-feasibility study level or better and must not include Inferred Mineral Resources. As such, no Ore Reserve can be publicly declared on the basis of this scoping study.

## APPENDIX: SCOPING STUDY PARAMETERS

The following information is adapted from the Cleveland Open Pit Scoping Study report dated 21 July 2015, prepared for Elementos by AMC Consultants Pty Ltd (AMC).

The study assumed that the proposed tailings reprocessing plant will be operating at the planned capacity for the duration of production from the open-pit operation. No inputs from the proposed underground operation were included in the study.

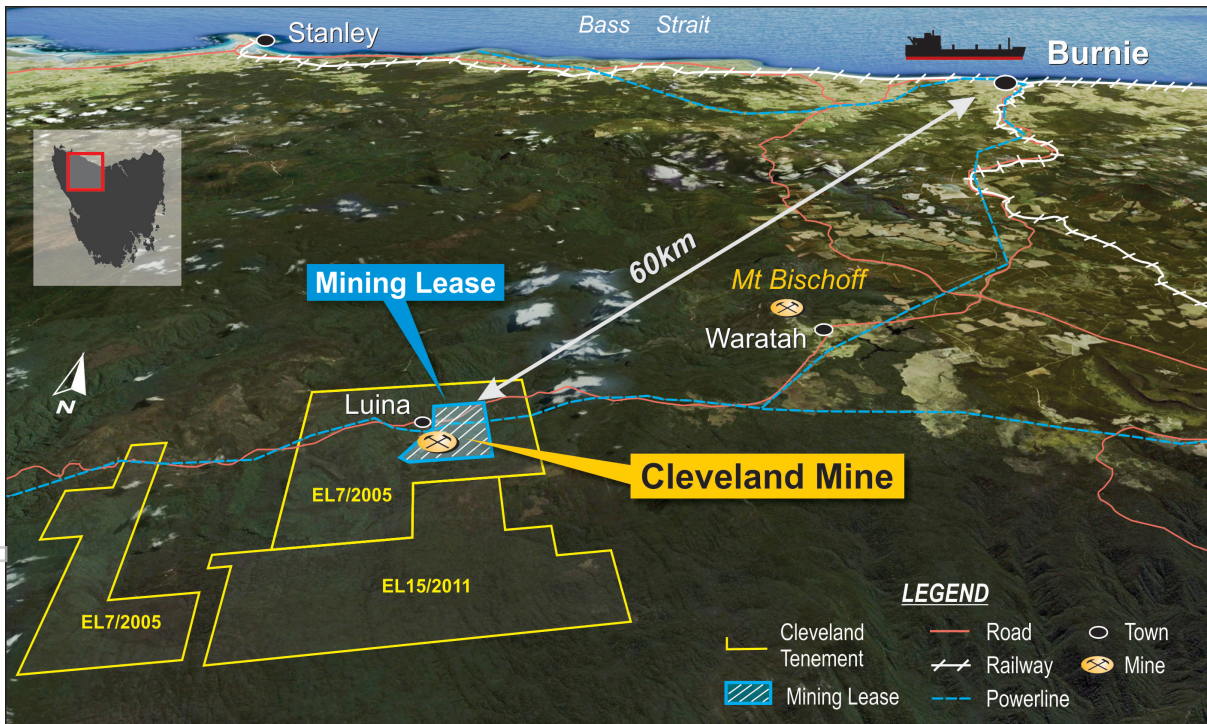
Unless otherwise stated, all cash flows are in Australian dollars, are undiscounted, and are not subject to inflation or escalation factors. All years are financial years (FY) ending 30 June.

### Background

The Cleveland Mine is situated at Luina, approximately 60 km from the port of Burnie (population approximately 20,000). North-west Tasmania has well-developed infrastructure and a strong mining culture. The site is linked to the port of Burnie and other major population centres on the north-west coast by sealed all-weather roads. Accessible power runs through the Cleveland mine site, and there is abundant water available for use. The Burnie region has a large pool of available and experienced workforce.

Cleveland was an underground tin and copper mine operated by Aberfoyle Limited (Aberfoyle) between 1968 and 1986. During the life of the Cleveland operations, Aberfoyle mined and treated 5.7 million tonnes of ore, producing approximately 24,000 tonnes of tin and 10,000 tonnes of copper in concentrate.

**Figure 1: Mining Lease Application Map**



### Geology

The Cleveland deposit is a series of tin and copper bearing semi-massive sulfide lenses (pyrrhotite-cassiterite-stannite-chalcopyrite) within a series of sedimentary rocks belonging to Hall's Formation of Cambrian age. Having undergone intense deformation from thrust faulting, the tin and copper lenses are steeply dipping and have strike lengths of up to 500 metres, across-strike thicknesses of up to 30 metres, and down-dip extents of up to 800 metres.

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The semi-massive sulfide mineralisation was formed by the hydrothermal replacement of limestone beds by mineralising solutions associated with the emplacement of the Devonian-Carboniferous Meredith granite. The deposit is geologically similar to the tin-bearing semi-massive and massive sulfide stratiform mineralisation at Renison.

## Mineral Resource

The Scoping Study is based on the Open Pit Mineral Resource, reported in accordance with the JORC Code 2012 to the ASX on 3 March 2015<sup>4</sup> and reproduced below.

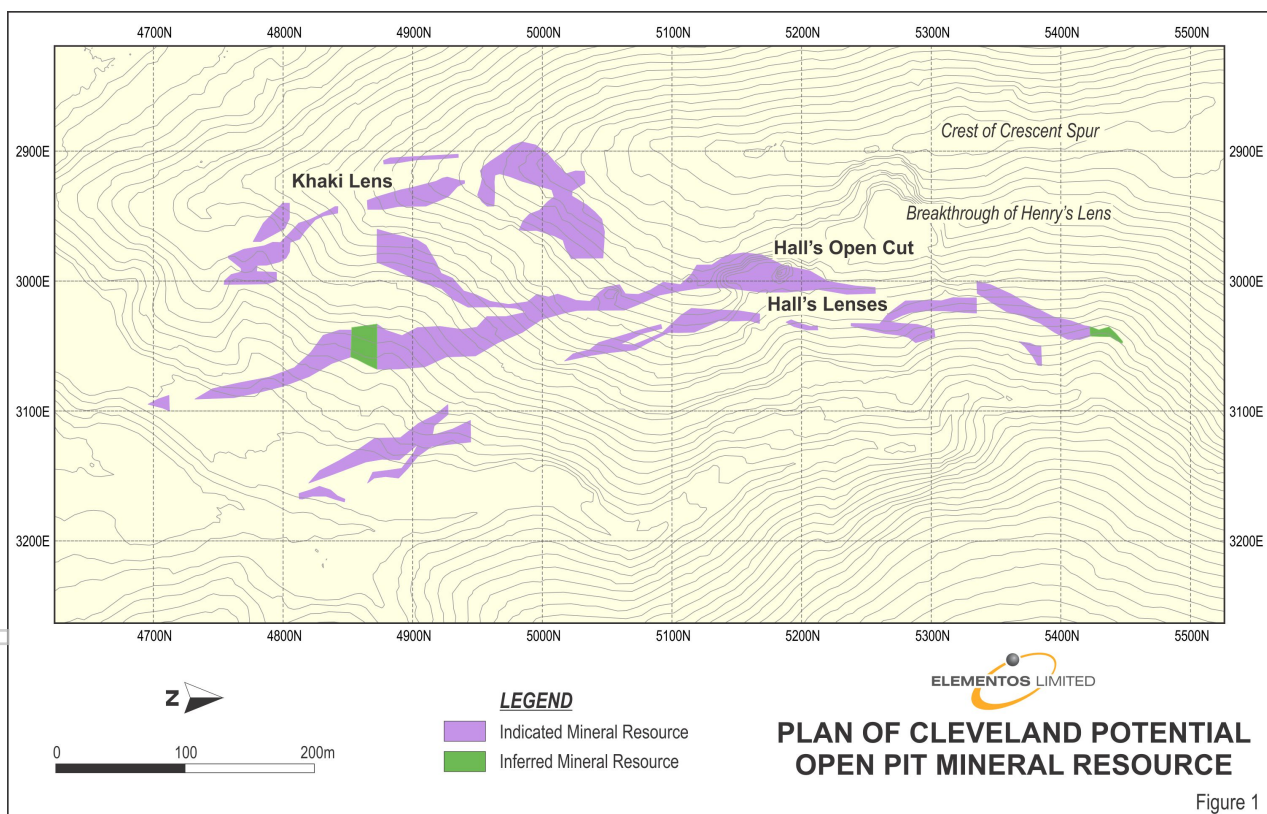
### Open Pit Tin-Copper Mineral Resource (at 0.35% Sn cut-off)

Category	Tonnage	Sn Grade	Cu Grade
Indicated	0.8 Mt	0.81%	0.27
Inferred	0.01 Mt	0.99%	0.34

Table subject to rounding errors; Sn = tin, Cu = copper; Mt = million tonnes

AMC reviewed the geological resource model and considered it suitable for use at a scoping study level for open-pit mining. No material deficiencies were identified in the review. Many of the zones of tin and copper mineralisation have been well drilled and there is no apparent reason to doubt the quality of the data used to generate the Mineral Resource estimate.

**Figure 2: Cleveland Open Pit Mineral Resource**



<sup>4</sup> Refer to announcement to the ASX on 3 March 2015, "Cleveland Open Pit - High-Grade Mineral Resource Defined", available <<http://www.asx.com.au/asx/statistics/announcements.do>>, ASX code "ELT".

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## Geotechnical

The Cleveland mineralisation occurs in a subvertical succession of sediments and volcanics. Historical accounts indicate that geotechnical conditions are good and the footwall, orebody, and hangingwall are competent rock units. Large unsupported stable wall exposures were reported in historical literature and core photos show competent rock conditions. Overall pit slopes of 60 degrees were used for pit optimisation. The pit design used 10 metre batters, 3 metre berms, and 80 degree batter angles.

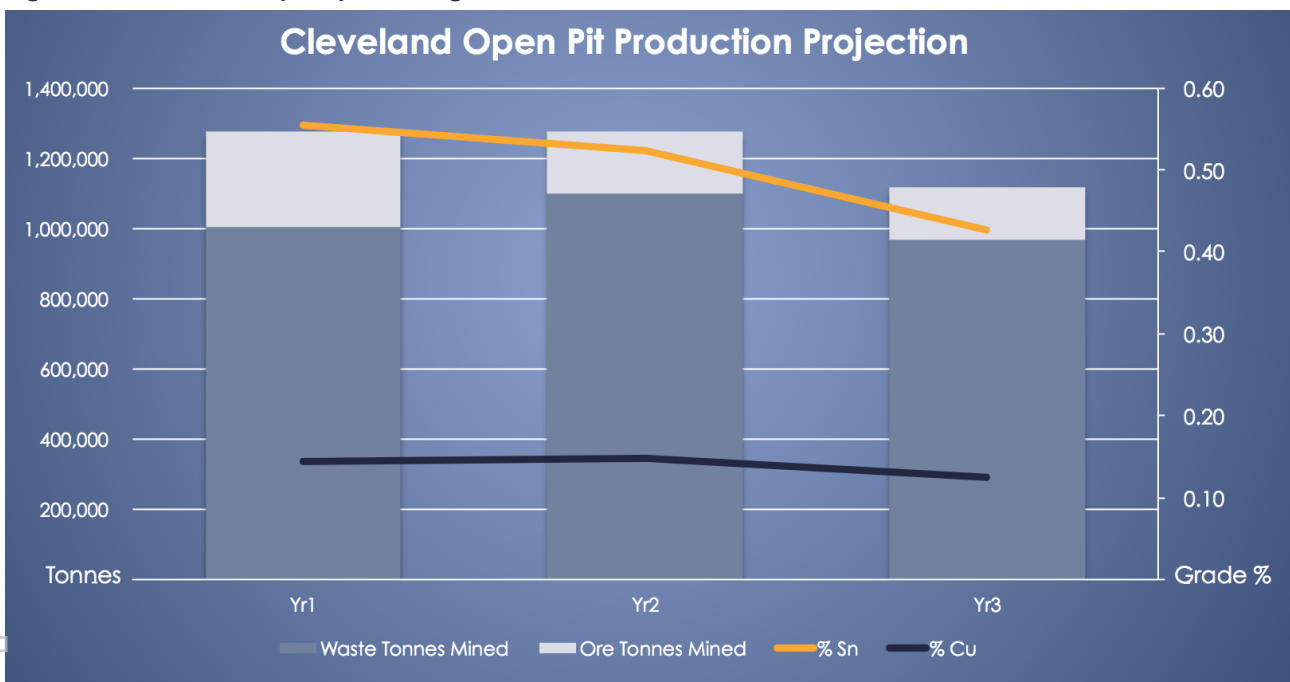
## Mining

AMC completed an open-pit optimisation using Whittle Four-X software. The input block model was regularised for mining loss and dilution and contained both Indicated and Inferred Resource blocks. The optimisation was based on the price, cost and economic parameters used in the financial analysis, which are discussed later in the report, and the geotechnical parameters discussed earlier.

The 86% revenue factor pit shell, comprising five separate pits, provided the maximum discounted cash flow for single-phase, bench-by-bench mining. This was used as the basis for final pit design, which provided an estimated open-pit mining inventory of 601 kt of ore grading 0.50% Sn and 0.14% Cu, with 3.1 Mt of waste rock at an average stripping ratio of 5.1. The five open pits are mined at an average rate of 200 kt per year over three years.

A 100% contract mining operation was assumed for the purpose of this study.

**Figure 3: Cleveland open pit mining schedule**



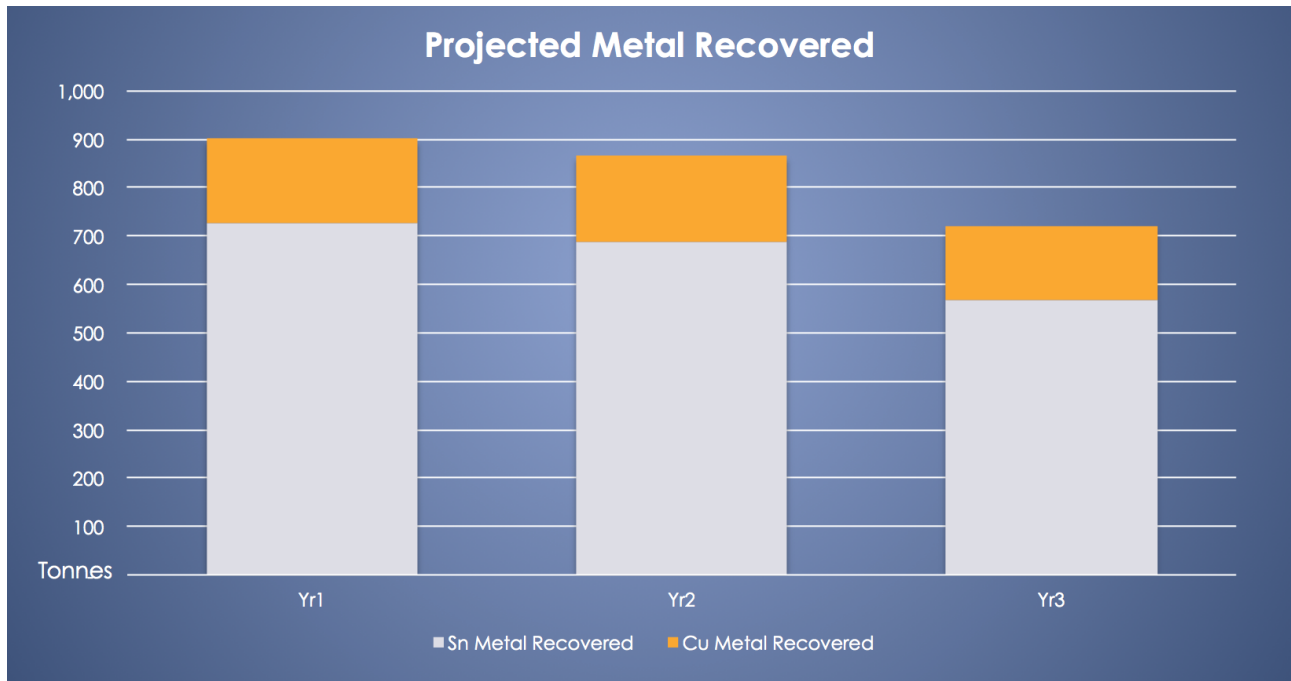
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## Mineral processing

The open pit will supplement the feed from the proposed tailings reprocessing operation, providing additional high-grade feed into the upgraded 650,000 tonnes per annum process plant. The stage 1 tailings process plant, which was the subject of a recently completed pre-feasibility study<sup>5</sup>, will need to be upgraded to allow the treatment of fresh ore from the open pit (and, ultimately, from underground). The required upgrades include a conventional three-stage crushing plant with closed-circuit screening, heavy-media separation circuit, and ball mill and classifier circuit.

Based on historical performance data from the historical Cleveland mill, the upgraded process plant is expected to achieve a tin recovery of 70% at a concentrate grade of 60% Sn and a copper recovery of 60% at a concentrate grade of 20% Cu.

**Figure 4: Cleveland open pit production schedule**



## Operating cost estimate

Using benchmark data from similar open-pit operations, AMC estimated the average life-of-mine mining cost at A\$4.60 per tonne. An additional A\$3.00 per tonne was applied for ore-related costs, such as grade control and rehandling, and A\$0.10 per tonne for rehabilitation of the open pits.

The processing operating cost was estimated at A\$12.55 per tonne of fresh ore. The processing and product costs used in the study were based on the preliminary plant design and costings prepared for the Cleveland Tailings Project Pre-feasibility Study. These costs were adjusted to account for the modifications required to process fresh ore. Modifying factors based on AMC's experience were also applied.

An additional A\$1.00 per tonne of ore processed was applied for general and administration costs attributable to the open pit in the financial evaluation.

<sup>5</sup> Refer to announcement to the ASX on 3 August 2015 "Cleveland Tailings PFS", available <<http://www.asx.com.au/asx/statistics/announcements.do>>, ASX code "ELT".

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## Capital cost estimate

The total capital cost for development of the open-pit operation was estimated at A\$6.6 million, comprising A\$1.0 million for establishing open-pit mining and A\$5.6 million for the plant upgrade. No contingency was included in this estimate.

The mining establishment estimate assumes that, under a contract mining operating model, the major capital items, including mobile equipment fleet, construction of site mining facilities, and pre-production site works, will be the responsibility of the mining contractor, and repaid in unit rates for mining ore and waste rock. The plant upgrade estimate includes a crushing plant, heavy-media separation circuit, and ball mill and classifier circuit.

No provision was made in the capital estimate for additional tailings storage capacity because the Tailings Storage Facility (TSF) designed for stage 1 has sufficient capacity. And no sustaining capital was provided in the capital estimate because of the short life of the project.

All capital items required for open-pit mining are expected to be internally funded from the stage 1 tailings reprocessing. As such, Elementos does not envisage the need for a capital raising.

## Sales

Two saleable products will be produced: a tin concentrate and a copper concentrate. Due to their concurrent operation, concentrates will contain revenue contributions from both the stage 1 tailings operation and the stage 2 open-pit operation. A net smelter return (NSR) algorithm was developed to estimate the revenue contributions of tin and copper from each feed source and the costs associated with bringing each product to market, excluding mining costs. A breakeven cut-off value of A\$77 per tonne was used in the NSR calculation to identify the potential mining inventory.

## Financial analysis

The stage 2 financial analysis was integrated with the previously completed stage 1 analysis, with financial inputs, including metal prices and discount rate, provided by Elementos, and physical inputs and costs provided by AMC. The analysis separated the revenue and capital of stage 1 and 2 to identify the incremental effect the open-pit operation would have on an existing tailings reprocessing operation.

The analysis showed that the open-pit operation makes a positive contribution to the combined cash flow. The cumulative before tax cash flow for the open-pit project is projected to be A\$21 million.

## Forward work plan

On completion of the underground mining scoping study, and based on the positive results of this open pit study and the recently completed tailings pre-feasibility study, Elementos intends to progress the open pit and underground projects to the pre-feasibility level to improve the accuracy of the estimates obtained in the scoping studies.

Pre-feasibility work will concentrate on metallurgical testwork on the combined tailings–fresh ore feed; a drilling program to confirm, upgrade and expand the near-surface mineralisation and rock quality data for new mining areas; and waste rock and tailings characterisation to determine the potential for acid mine drainage.

The pre-feasibility study will also include a first-principles cost build-up informed by quotations to improve the confidence in mining, processing, and general and administration costs. Integration studies for a combined tailings reprocessing, open-pit mining, and underground mining operation will also be performed as part of the pre-feasibility study.

Concurrent with the open pit – underground pre-feasibility study, Elementos will advance the tailings project to a definitive feasibility study level. And, subject to obtaining all the necessary approvals, production from the tailings operation is scheduled to commence in FY2017.

Cleveland Project schedule and milestones <sup>a</sup>						
✓ completed milestone • scheduled milestone ★ scheduled production start	2014	2015	2016	2017	2018	
Acquisition	✓					
Mineral Resource			✓			
Mining Lease Application			✓			
STAGE 1: TAILINGS PROJECT						
Environmental Application			✓			
Pre-feasibility Study & Ore Reserve			✓			
ML & Environmental Approval				•		
Feasibility Study					•	
Construction					•	
Production					★	
STAGES 2 & 3: OPEN PIT & UNDERGROUND PROJECTS						
Open Pit Scoping Study			✓			
Underground Scoping Study				•		
Drilling Program					•	
Mineral Resource Upgrade					•	
Pre-feasibility Study & Ore Reserve					•	
Environmental Application					•	
Environmental Approval					•	
Feasibility Study					•	
Construction (Open Pit)					•	
Production					★	

<sup>a</sup> All dates are subject to obtaining necessary approvals and project finance.

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