ASX Announcement

Aus Tin Mining Limited (ASX: ANW)

7th April 2014

Pre-Feasibility Study Advances the Taronga Tin Project

Highlights

- **Pre-Feasibility Study demonstrates technical and economic viability of Taronga Tin Project**
- **Maiden Ore Reserve (JORC 2012) of 22.0Mt @ 0.16%Sn for 35,600t contained tin**
- **Open cut mining and conventional processing to generate an average 2,815 tonnes per annum of recovered tin in concentrate over 9.3 year life of mine**
- **Revenue of AU$705M (recovered tin only)**
- **C1 Cash Costs[1] of AU$16,553/t of recovered tin during proposed financing period**
- **Initial Capital and pre-production costs of AU$87.8M**
- **Net Present Value of AU$63.2M and IRR of 27.3%**
- **A number of areas for potential upside have been identified**
- **Company to progress discussions for next stage funding**

Aus Tin Mining Limited (the **Company**) is pleased to announce the results of the Pre-Feasibility Study (**PFS**) for the Taronga Tin Project (**the Project**) located in northern New South Wales. The PFS confirms the technical and economic viability of the Project and highlights areas of potential economic upside. The PSF was completed in conjunction with independent consultants including MiningOne (Mineral Resource), GHD (Mining and Infrastructure), DRA Pacific (Processing) and Mr Ron Goodman of Devlure (Metallurgy).

The Company has previously reported the Mineral Resource (JORC 2012) of 36.3Mt at 0.16%Sn for 57,000t of contained tin[2]. GHD have estimated a Probable Ore Reserve (JORC 2012) of 22.0Mt @ 0.16%Sn for 35,600t of contained tin or 96% of the Production Target. The PSF proposes processing the relatively simple ore at 2.5Mt per annum using conventional practices and is expected to achieve an overall tin recovery of 70 percent and generate an average 2,815t of tin in concentrate per annum over a 9.3 year life of mine life. Medium grade concentrate (55% Sn) acceptable to tin smelters will be produced and will likely be exported into the Asian market. Table 1 summarise the key results for the PFS and additional details are provided in Appendix 1.

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[1] C1 Cash Cost is the sum of mining, processing, administration, transportation and off-site refining

[2] Refer ASX Announcement 26 August 2013

Pre-Feasibility Parameter		PFS Base Case
Mineral Resource (contained tin)	t	57,200
Probable Ore Reserve (contained tin)	t	35,600
Production Target (contained tin)	t	37,100
LOM Strip Ratio (Waste:Ore)	x	1.35
Annual plant throughput	t	2,500,000
Tin Recovery	%	70%
Concentrate grade	%Sn	55%
Average tin in concentrate production	tpa	2,815
LOM C1 Cash Costs	AU$/t Sn	17,935
Initial CAPEX and Pre-Production Costs	AU$	87.83M
$NPV_{(Pre\text{-}tax,\ 8\%\ discount\ rate,\ un\text{-}geared)}$	AU$	63.15M
IRR	%	27.3

Table 1: Taronga Tin Project PFS Operating Parameters

With a view to optimising the financeability of the project, operating costs have been reduced during the initial four years through a reduced mine strip ratio (1.0x) to generate forecast C1 Cash Costs equivalent to AU$16,553/t recovered tin.

Substantial savings in processing plant capital costs compared to previous estimates are achievable as a result of the reduced production rate and consequential use of modular equipment. Initial capital and pre-production costs of AU$87.83M are equivalent to AU$28,082/t recovered tin[3] and are less than the average US$30,700/t[4] recovered tin reported for other proposed tin projects. The competitive capital cost is a result of minimal pre-development costs associated with the open cut mine and the positive benefits of ore pre-concentration prior to primary grinding.

Adopting an independent forecast tin price of US$25,000/t[5] and forecast AU$:US$ of 0.90 the PFS Base Case pre-tax, un-geared $NPV_{(8\%)}$ is AU$63.15M and IRR of 27.3%. However, during the PFS several areas of potential upside were identified and will be investigated during the Definitive Feasibility Study (**DFS**). The most significant potential is an increase in plant feed grade attributable to the observation that increasing sample volumes yields an increased tin grade. MiningOne in their report on the Mineral Resource estimate a probable range of true grades between 0.19%Sn and 0.25%Sn (refer Appendix 1). If the plant feed grade were increased from 0.16%Sn to 0.19%Sn (ie the lower end of probable range of true grades), pre-tax, un-geared $NPV_{(8\%)}$ would increase to AU$145.71M and IRR to 47.8%. Other areas of potential upside include reduced processing plant capital costs, reduced mine operating costs, increased tin recovery and the recovery of by-product credits.

Over the past six months the Company has short-listed a group of global organisations that have expressed interest in providing the funding for the DFS and possibly participate in the subsequent construction phase. These discussions will be now be progressed ahead of a decision to formally proceed with the DFS.

The Company's Chief Executive Officer, Mr Peter Williams said "*We are pleased with the results of the pre-feasibility study confirming the technical and economic viability of the Taronga Tin Project and are excited by the extent of upside opportunities identified during the work. Approaching the study from the perspective of not simply generating a technically sound project but also one that can be financed is expected to be rewarded as we move forward with our funding discussions.*"

[3] Calculated on CAPEX & pre-production costs of AU$87.83M and Year 1 recovered tin production of 3,127t
[4] ITRI March 2014 and Company Reports
[5] ITRI March 2014

On behalf of the Board
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COMPETENT PERSON STATEMENT

The information in this presentation that relates to Exploration Results is based on information compiled by Mr Nicholas Mather B.Sc (Hons) Geol., who is a Member of The Australian Institute of Mining and Metallurgy. Mr Mather is employed by Samuel Capital Pty Ltd, which provides certain consultancy services including the provision of Mr Mather as a Director of Aus Tin Mining. Mr Mather has more than five years experience which is relevant to the style of mineralisation and type of deposit being reported 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, Minerals Resources and Ore Reserves' (the JORC Code). This public report is issued with the prior written consent of the Competent Person(s) as to the form and context in which it appears.

The information in this Announcement that relates to Mineral Resources is based on information extracted from the report entitled "Maiden JORC Resource Estimated for the Taronga Tin Project" created on 26th August 2013 and is available to view on www.austinmining.com.au Aus Tin Mining 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.

In the information in this Announcement that relates to Ore Reserves is based on information extracted from the report entitled Taronga Tin Project 2014 Pre-Feasibility Study – Mining Report" GHD report #41457858 dated 7th April 2014. The Ore Reserve has been calculated by Mr Hugh Thompson of GHD who has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken 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".

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Appendix 1: Preliminary Feasibility Study

Scope, Methodology, Environmental and Costs

Summary

The Taronga Tin Project Pre-Feasibility Study (**PFS**) is based on an open cut mining operation with processing of ore at site to produce a tin concentrate for export into the Asian market.

A total of 23.2Mt of ore and 31.3Mt of waste will be mined at an average strip ratio of 1.35 x over a 9.3 year life of mine. Ore will be crushed at 2.5Mt per annum and pre-concentrated in the Heavy Medium Concentrator (**HMC**) with approximately 60 percent of HMC feed discarded as waste to generate 1.0Mt per annum of concentrator feed at approximately 0.46%Sn. A conventional gravity and flotation concentrator will produce an annual average 5,200 DMT of concentrate over the life of mine assaying 55%Sn acceptable to tin smelters.

The PFS was conducted by Aus Tin Mining Limited (the **Company**) in conjunction with input from the following consultants:

Discipline	Consultant	Outcomes
Geology	MiningOne	Mineral Resource Estimate (JORC 2012)
Mining	GHD	Ore Reserve (JORC 2012) and mining schedule & costs
Metallurgy	Devlure (Ron Goodman)	Metallurgical review Processing plant operating parameters
	ALS (Burnie)	Initial copper & silver metallurgy
Processing	DRA Pacific	Plant design and operating parameters
Infrastructure	GHD	Initial site layout and infrastructure design
Environmental	RW Corkey	Initial site layout and EIS parameters

Table 1: Parties to the Taronga Tin Project Pre-Feasibility Study

Mineral Resource (JORC 2012)

The Company announced a maiden Mineral Resource for the Taronga Tin Project on 26th August 2013. The estimated tin resource, reported as Indicated and Inferred Resource in accordance with the 2012 edition of the JORC Code, is listed in Table 2. Of the total estimated resource, approximately 80 percent of the contained tin is in the Indicated category sufficient for use as a basis for estimating a Probable Ore Reserve.

PFS - Mineral Resource (JORC 2012)									
0.1% Sn Cut-off Grade									
	Indicated			**Inferred**			**Total**		
	Mt	**Assay % Sn**	**Tin Metal tonnes**	**Mt**	**Assay % Sn**	**Tin Metal tonnes**	**Mt**	**Assay % Sn**	**Tin Metal tonnes**
Northern Zone	19.3	0.16	30,800	7.7	0.12	9,300	27.0	0.15	40,100
Southern Zone	7.6	0.19	14,400	1.7	0.16	2,700	9.3	0.19	17,100
Total	**26.9**	**0.17**	**45,200**	**9.4**	**0.13**	**12,000**	**36.3**	**0.16**	**57,200**

Table 2: Taronga Tin Project - Tin Mineral Resource (JORC 2012)

The resource estimate is based on 357 historic diamond and percussion drill holes for a total 33,350m and recent QAQC analysis. The deposit remains open at depth and no provision has been included in the resource estimate for the potential grade uplift attributable to sample volume variance (the Support Effect).

The maiden Mineral Resource Estimate for the Taronga Tin Project also included an Inferred resource for copper (36.3Mt @ 0.07%Cu for 26,400t contained copper) and silver (36.3Mt @ 3.8g/t Ag for 4,400,000oz of contained silver). Recovery of neither copper nor silver has been included in the PFS but has been identified for potential upside and will be examined in more detail during the Definitive Feasibility Study (**DFS**).

Probable Ore Reserve (JORC 2012) & Mining Inventory

The Mineral Resource (JORC 2012) from August 2013 was used to generate a Probable Ore Reserve (JORC 2012) and Production Target as summarised in Table 3.

PFS Base Case - Ore Reserves (JORC 2012) & Production Target									
	Proven			Probable			Production Target		
	Mt	Assay % Sn	Tin Metal tonnes	Mt	Assay % Sn	Tin Metal tonnes	Mt	Assay % Sn	Tin Metal tonnes
Northern Zone	-	-	-	15.6	0.16	24,500	16.5	0.16	25,600
Southern Zone	-	-	-	6.4	0.17	11,100	6.7	0.17	11,500
Total	**-**	**-**	**-**	**22.0**	**0.16**	**35,600**	**23.2**	**0.16**	**37,100**

Table 3 Taronga Tin Project - Ore Reserve (JORC 2012)

Approximately 96.0 percent of contained tin in the Production Target has been classified as Probable Ore Reserves (JORC 2012). Approximately 4.0 percent of contained tin in the Production Target is sourced from Inferred Resources. This material has been included on the basis that it falls within the proposed pit shells and the nature of mineralisation is consistent throughout the orebody. However, there is a low level of geological confidence associated with inferred mineral resource and there is no certainty that future exploration work will result in the determination of indicated mineral resources or that the production target itself will be reaslised. It could be reasonably expected that in an optimised production schedule the exclusion of inferred material would have minimal impact on the project economics.

Mining

Open cut mining operations at the Taronga Tin Project are based upon the following key inputs:

- Mining to be undertaken concurrently in the Northern and Southern Zones.
- Mining will be undertaken by a suitably qualified contractor using drill & blast, excavators and 90t rear dump trucks.
- The mining contractor will employ a substantially local workforce operating initially on a dayshift only basis before expanding to a day & night operation with an increasing fleet capacity.
- Open pit mining will be undertaken to a maximum depth of 175m or approximately 75m below the surround ground level (mineralisation occurs on two ridges approximately 100m high). The life of mine strip ratio will be 1.35x but as low as 0.8x in Year 1.

- A cut-off grade of 0.1%Sn will be adopted during the initial years with low grade indicated material stockpiled for future consumption.
- Mine waste will be classified according to potential acid forming characteristics and stockpiled accordingly for final placement.

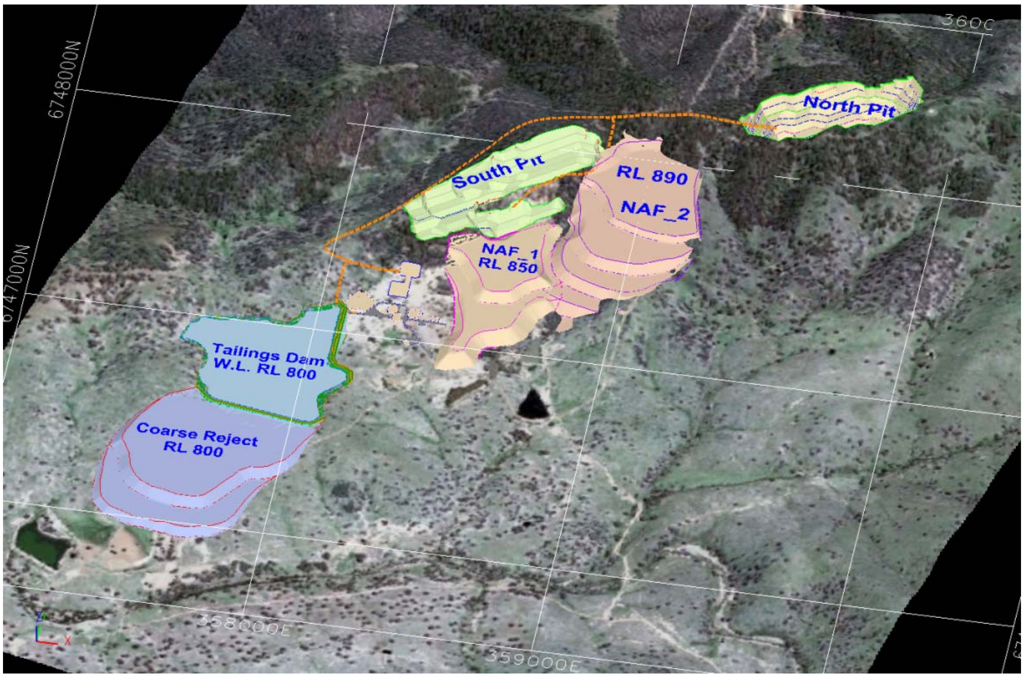

Figure 1 provides an overview of the life of mine pit shells and associated infrastructure

Metallurgy

The Company announced the results of a metallurgical review of the Project on 23rd October 2013, and in summary concluded that:

- The predominant tin mineral (cassiterite) is mostly coarse grained and the ore may be regarded as a simple ore when compared to the complex high sulphide, fine grained, disseminated tin ores such as those found for example in Tasmania.
- Liberation studies as part of the ore characterisation test work showed there was good liberation at particle sizes as high as 2.0mm and that initial grinding to $750\mu m_{(P80)}$ was sufficient, and although regrinding to $300\mu m_{(P80)}$ will generate satisfactory results the grind size should be optimised during future work.
- The ore is highly amenable to pre-concentration, enabling significant rejection of non-mineralised material prior to grinding and a substantial increase in tin grade prior to the concentrator.
- The concentration of cassiterite by a combination of classification, gravity separation with inter-stage regrinding and the flotation of any sulphides, should result in a medium grade concentrate (55% Sn) acceptable to tin smelters.
- Overall tin recovery is expected to be 70%.
- The metallurgical flowsheet for the Taronga Tin Project is provided in Figure 2.

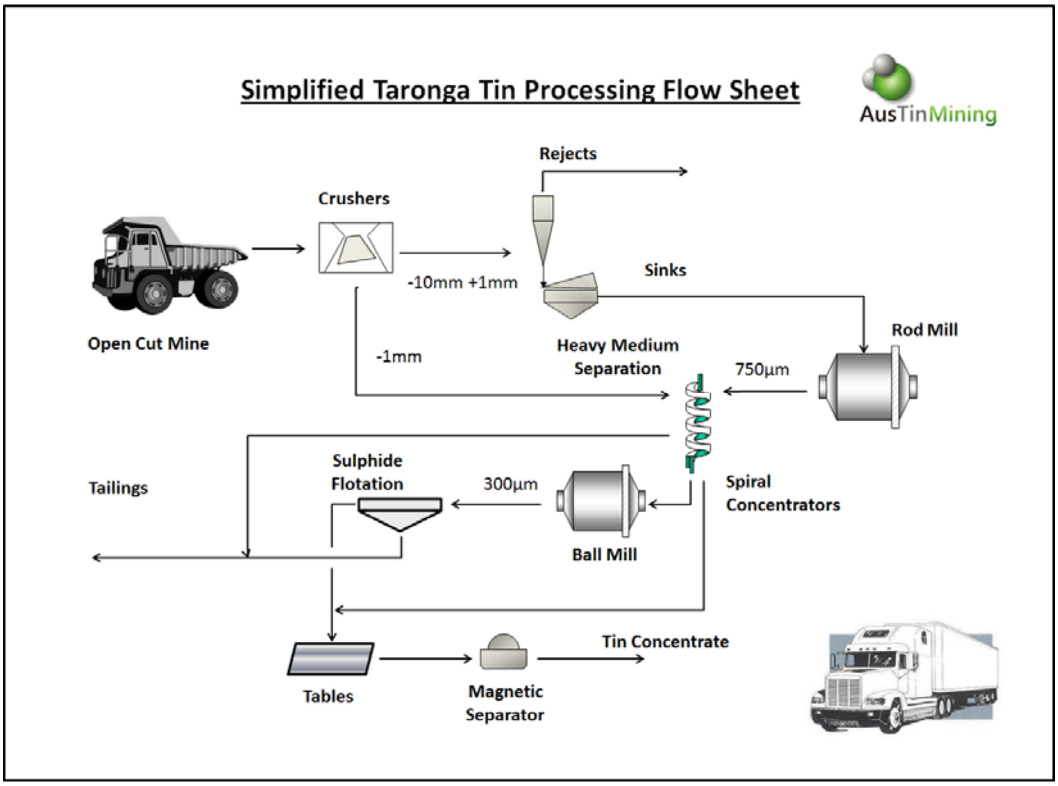

Figure 2: Simplified Taronga Tin Project Processing Flow Sheet

Processing

Processing operations at the Taronga Tin Project are based upon the following key inputs:

- The processing plant has been designed on the basis of treating 2.5Mt per annum using new equipment throughout. Delivery of key equipment can be achieved within the proposed construction timetable of calendar 2016, albeit orders for longer lead items may need to occur during the second half of calendar 2015.
- Processing operations to be undertaken on a 24/7 basis by the Company employing a substantially local workforce.
- Tin concentrate will be produced at site and transported to Brisbane by road and assumed shipped to Asia for smelting. A sulphide concentrate containing the majority of copper, silver and other potential by-product credits will be stored in a dedicated storage dam for future possible treatment.
- HMC Rejects and coarse tailings will be utilised in the construction of a TSF for the final placement of -300µm tailings.
- Plant maintenance will be undertaken by Company personnel, supplemented by external contractors as necessary.

Infrastructure

Infrastructure requirements at the Taronga Tin Project are based on the following key inputs:

- Power is to be sourced from the sub-station at Emmaville. Essential Energy has confirmed the availability of the maximum anticipated demand of 4.9MW. The project is located 7km NW of Emmaville in northern NSW.

- Water is to be sourced from a specifically constructed 200Ml dam adjacent to the project site. Initial discussions have been held with the landowner and GHD have confirmed the suitability of the site assuming average rainfall (estimated at 810mm per annum).
- Road transportation of tin concentrate and all goods between the Project and Brisbane will be via the New England Highway and the Emmaville/Glen Innes road.

Environment and Community

The Taronga Tin Project is substantially situated over two freehold properties and two parcels of crown land. Although part of the land is utilised for grazing, much of the area shows signs of disturbance from previous mining activities. During an initial site assessment to scope details for the Environmental Impact Statement (**EIS**), it was recommended to the extent possible to develop site infrastructure on areas impacted by previous mining activities.

A previous flora and fauna study commissioned by Aus Tin Mining[6] noted the absence of any threatened flora species, significant fauna habitat features or endangered ecological communities at the mine site. More comprehensive studies will be undertaken in conjunction with the EIS.

The Taronga Tin Project will be deemed a Project of State Significance and preliminary discussions have been held with government agencies including Department of Planning and Infrastructure, Department of Trade & Investment and the Glen Innes Severn Council. Initial community consultation has been undertaken but will be expanded during the EIS.

Capital Expenditure and Pre-Production Costs

Initial capital expenditure (CAPEX) and pre-production costs are estimated at $87.83M and are summarised in Table 4.

PFS Base Case - CAPEX	AU$ Million
Initial CAPEX & Pre-production costs	
Processing	60.40
Mine & Site Infrastructure	17.01
Off-site Infrastructure	3.65
Pre-production other	6.77
Total	**87.83**
Sustaining CAPEX	10.50

Table 4: PFS Base Case Summary CAPEX and Pre-production costs

CAPEX estimates for the processing plant have been based on a combination of equipment prices and standard industry costs. Mine and Infrastructure CAPEX estimates have based on a schedule of quantities and standard industry costs.

[6] Review of Environmental Factors, Exploration Activities at EL7348, April 2013

Operating Costs

Life of mine C1 Cash Costs[7] are estimated at AU$464.36M or A$17,935/t recovered tin and are summarised in Table 5. However, during Years 1 to 4, the C1 Cash Costs are estimated at A$16,553/t recovered tin owing to a lower strip ratio and above average mine grade.

PFS Base Case - OPEX	Years 1-4			LOM		
	Total A$M	A$/t Ore	A$/t Sn	Total A$M	A$/t Ore	A$/t Sn
Mining	93.34	9.33	8,026	233.55	10.06	9,021
Processing	75.60	7.56	6,501	175.54	7.56	6,780
Administration & Other	23.57	2.36	2,027	55.36	2.38	2,134
C1 Cash Cost	192.51	19.25	16,553	464.36	20.01	17,935
C3 Cash Costs[8]	242.03	24.20	20,811	575.64	24.80	22,233

Table 5: PFS Base Case Summary Cash Costs

Mining costs have been based on a combination of first principles and schedules of rates received from suitably qualified contractors. Processing costs have been calculated from first principles and suitably qualified parties. Off-site costs, including transportation and smelting costs have been sourced from suitably qualified parties.

Future work program

A number of areas of potential upside have been identified during the PFS and will be examined during the DFS. Notable areas include the following:

- **Increased plant feed grade** - Mining One note in their Mineral Resource (JORC 2012) report a probable range of true grades between 0.19%Sn to 0.25%Sn based on a trend observed whereby larger samples tended to provide a higher grade (the Support Effect) and as evidenced by assays results for bulk samples collected for metallurgical pilot plant test work conducted by previous owners (0.21 to 0.24%Sn). Increasing the average plant feed grade from 0.16%Sn to 0.19%Sn in the PFS Base Case would have the impact of increasing $NPV_{(8\%)}$ from AU$63.15M to AU$145.71M. Appropriate sampling to evaluate the Support Effect will be undertaken during the DFS.

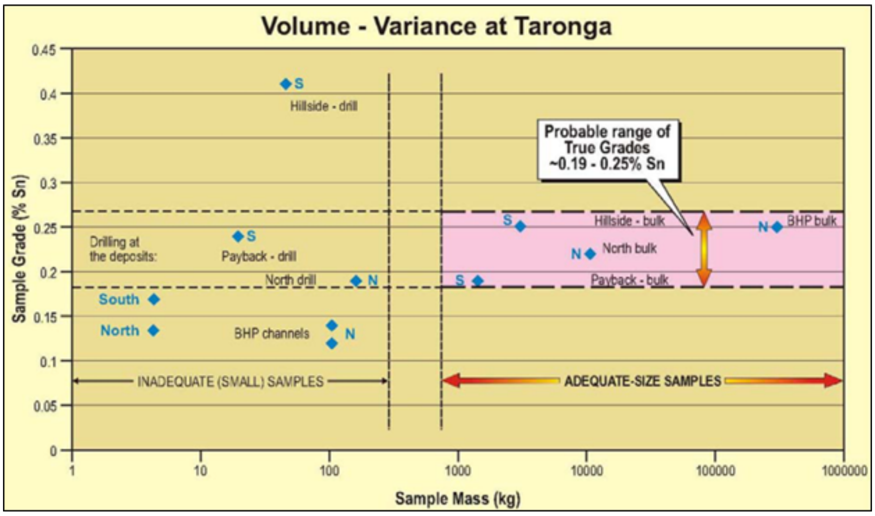

Figure 3: Probable range of true grades for Taronga Tin Project (MiningOne 2013)

[7] C1 Cash Cost is the sum of mining, processing, administration, transportation and off-site refining
[8] C3 Cash Cost is the sum of C1 Cash Cost plus depreciation & amortisation and royalties

- **Reduced Mine Operating Costs** – GHD have reported the potential to decrease mining costs by adopting a smaller truck size. The PFS Base Case assumes the use of CAT777(96t) rear dump trucks but GHD have modelled 5 percent cheaper haulage costs using Volvo FMX410 prime mover and quarry tipper body type truck. If smaller trucks were employed savings in CAPEX could also be achieved on the cost of Haul Road #1 (A$4.5M) due to a narrower road width required.
- **Reduced processing plant CAPEX** – DRA Pacific and Devlure both report the potential to optimise the operating performance and CAPEX of the slimes scavenging circuit by replacing shaker tables with centrifugal concentrators. The PFS Base Case CAPEX estimate for the desliming circuit is AU$7M and could be reduced significantly if centrifugal concentrators are employed. Appropriate metallurgical test work will be conducted during the DFS.
- **Increased tin recovery** – Devlure have reported on the potential to recover additional fine tin through advances in gravity technology and tin flotation. Devlure also report on the potential to improve recovery through a smaller HMC feed size and reduced secondary regrind product sizing. A one percent improvement in overall tin recovery increases $NPV_{(8\%)}$ by AU$5.99M. Appropriate metallurgical test work will be conducted during the DFS.
- **Inclusion of by-product credits** – preliminary work completed at ALS Burnie demonstrates that copper and silver may be recoverable to a sulphide concentrate. GHD have estimated the life of mine plant feed to include 23.2Mt averaged at 4.53g/t Ag and 0.08%Cu. If overall silver and copper recoveries of 30 percent [9] are assumed, life of mine revenue could increase by AU$61M[10]. Appropriate metallurgical test work will be conducted during the DFS.

Other work to be undertaken in conjunction with the DFS will include:

- Limited drilling to target a Measured Resource for initial production
- Recovery of sample (drilling and/or bulk sample from adits) for the metallurgical test work
- Process plant cost and performance optimisation based on further metallurgical test work
- Assessment of drill samples for acid generating capacity of ore and waste
- Collection of geotechnical data and bore-hole water samples to investigate hydrology
- Completion of various works associated with the Environmental Impact Statement, including but not limited to surveys for flora, fauna, heritage, dust, noise and traffic
- Preparation of feasibility study

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[9] Previous test work generated flotation silver and copper recoveries from 49% and 55% respectively

[10] Assumes silver and copper recovery of 30%, silver price AU$22/oz and copper price AU$7,000/t

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Diamond drilling was used to obtain 1m samples of core which was sawn in half longitudinally. The half core was crushed then ground to 500 microns. This is industry standard work. • Percussion drilling was used to obtain 1m samples which were crushed and ground to 500 microns. This is industry standard work.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Samples considered for the resource estimate came from diamond drilling and percussion drilling. A total of 357 holes were drilled for a total length of 33,350m. Diamond drill holes accounted for 24,187m and percussion holes for 9,163m. • Diamond drill holes were collared HQ or with percussion drilling,

Criteria	JORC Code explanation	Commentary
		reducing to NQ triple tube once solid ground was met. Triple tube drilling was employed to maximise core recovery and minimise the loss of cassiterite. Core was not oriented. • Percussion drilling was not reverse circulation drilling but used high pressure rigs to ensure efficient sample recovery.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Diamond drilling core recovery was measured by length or by sample mass. Triple tube drilling was used to maximise core recovery. Core recoveries were generally high and no systematic core losses were recorded. • Percussion drilling used high pressure rigs. Sample recovery was monitored by weighing individual 1 metre samples and comparing these with theoretical masses. Actual sample masses and consistency of sample masses provided a good indication of recoveries which were adequate.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Diamond drill core and percussion chips were logged to a level of detail which was adequate to support this Mineral Resource estimation. • Core logging was qualitative and quantitative in nature. • 19,567m of relevant intersections were made and 100% of the intersections was logged.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Diamond drill core was sawn in half. The half core was crushed then ground to 500 microns from which a 100g sample was split and pulverized to less than 75 microns. A replicate of each tenth sample was split and pulverised to check sample preparation and assaying reliability. These were reasonable sampling and sample preparation techniques. • Percussion samples were processed in a similar way to diamond drill core. A replicate of each tenth sample was split and pulverised to check sample preparation and assaying reliability. These were reasonable sampling and sample preparation techniques. • Replicate samples showed that a majority of replicate Sn assays deviated by less than 2.5% relative to perfect correlation. • Sample sizes of diamond drill core and percussion were appropriate to the grain size of the material being sampled.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• All Sn assays were performed by taking ten gram samples from 100g pulverised samples. The samples were analyzed for Sn using pressed powder X-ray fluorescence at the Perth laboratories of Analabs Pty Limited ("Analabs"). Pressed powder X-ray fluorescence was the industry standard for Sn analysis at the time. • Comparison of Sn assays of samples from diamond drill and percussion holes were good and no bias between the two sets of analyses is evident. • Every 30 assays, four standards were assayed. In addition, every tenth sample was duplicate assayed. Selected samples were check assayed at other laboratories and using other assay methods, including an XRF method developed by Cleveland Tin Limited in Tasmania which was a significant Australian tin producer at the time. The checks confirmed that Analab's procedures were satisfactory and that sample preparation and assay quality were consistently maintained by Analabs.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Newmont made geological interpretations using cross-sections and level plans. The Northern Zone 101 and the Southern Zones of Payback, Payback Extended, Hillside and Hillside Extended were interpreted on cross-sections reported in a Pre-feasibility Study prepared by Newmont Holdings Pty Ltd ("Newmont") in 1982.. • For this resource estimate, the Newmont interpretation for Zone 101 was accepted, and an outer Northern Zone and the four Southern Zones were interpreted based on the Newmont cross-sectional interpretations and threshold Sn grades determined for the zones based on statistical analysis of the Sn assay data. • No twinned holes were drilled at Taronga. • No adjustments were made to assay data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drill hole collars were located by theodolite traverses by surveyors. • Holes were surveyed down-hole for azimuth and dip using down-hole cameras. Given the generally non-magnetic nature of the mineralisation and the host rocks, this was a reasonable survey method. • A local grid parallel to the strike of the mineralisation was used. Local grid north has a bearing of 045^{O} true. A 3.5km baseline was surveyed with surveyed cross-lines at 100m intervals.

Criteria	JORC Code explanation	Commentary
		• Topographic maps at 1:1000 scale were prepared by Australian Aerial Mapping. The maps were related to the local grid.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Drilling was nominally on a 50m X 50m pattern with 25m infill drilling in some areas. • Data spacing is sufficient to establish the geological and grade continuity appropriate for the Mineral Resource estimation and classification procedures applied for this report. • Samples were nearly all taken over 1m intervals. Samples were composited to 1m intervals.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Holes were drilled perpendicular to the general strike of the mineralised zones at dips of about -40^{O} to -60^{O}. The mineralised zones have a near vertical dip and the orientation of the drill holes was appropriate.
Sample security	• *The measures taken to ensure sample security.*	• Samples of drill core and percussion chips were bagged and tagged and shipped to the assay laboratory by independent third party transport.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• None known.

Section 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Mineral Tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national parks and environmental settings.*	• The Taronga Tin Project is contained within EL 7348, comprising 16 units in 1:1,000,000 Armidale, located NW of Emmaville. • EL 7348 is owned 100% by AusNiCo Limited and was recently approved for renewal for two years by NSW Trade & Investment

Criteria	JORC Code explanation	Commentary
	• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	
Exploration done by other parties	• *Acknowledge and appraisal of exploration by other parties*	• In 1933, BHP undertook the first systematic testing at the Taronga Project with the driving of a 90m adit into the deposit, from which bulk samples were extracted. BHP treated three parcels of mineralised material for a recovered grade of 0.25% tin. It was reported that channel sampling in the adit wall of the section from which the mineralised material was removed had returned a much lower average grade of only 0.15% tin. Between 1958 and 1964, BHP conducted extensive sampling in 11 shallow surface costeans and drilled twelve percussion drill holes into sections of the deposit. • In 1978, Endeavour Resources Ltd was granted an Exploration Licence over the area and subsequently farmed it out to the Newmont JV. The Newmont JV consisted of a consortium of Newmont Holdings Pty Ltd (as manager), ICI Australia, Endeavour Resources and Pelsart Holdings. The Newmont JV carried out extensive exploration and investigatory work between 1978 and 1984, including the drilling of 357 holes (178 diamond core and 179 percussion) for a total of 33,350 metres of drilling in all. Notably only 18 holes failed to intersect tin mineralisation above the initial 0.1% tin lower cut-off grade. • The Newmont JV also drove three adits, generating sufficient mineralised material to complete three programs of metallurgical test work and an evaluation of the impact of sample size on resource grade. Newmont concluded in their study that the grade from the bulk samples was higher than the drilling data, thought to be due in part to volume variance effects. • The Newmont JV completed a Preliminary Feasibility Study (**PFS**) which included a historic resource estimate, open-cut mine design, conceptual metallurgical process flow sheet, processing plant design and project related infrastructure. The PFS also concluded that a saleable concentrate of 55% Sn could be produced. Following an initial estimation based on a 0.10% Sn cut-off, economic analysis post PFS showed that a 0.083% "break-even" cut-off grade could be sustained. A subsequent geostatistical ore reserve estimation of 46,757,000 tonnes @0.145% Sn was calculated.

Criteria	JORC Code explanation	Commentary
Geology	• *Deposit type, geological setting and style of mineralisation*	• The Taronga Tin deposit is a sheeted vein system that comprises two main zones of mineralisation, the Northern Zone and Southern Zone which are approximately 300 metres apart. Over 90% of the tin is situated within quartz vein boundaries and occurs predominantly as cassiterite
Drill hole information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *Easting and northing of the drill hole collar* o *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *Dip and azimuth* o *Down hole length and interception depth* o *Hole length* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of this report, the Competent Person should clearly explain why this is the case*	• Appendix I (attached) tabulates all drill hole information (collar positions and elevation, hole declination and azimuth, hole length (total depth). Appendix II (attached) provides information on intercepts of tin mineralisation in each hole. Down hole interception depths are provided. Only holes with tin mineralised intercepts are shown.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregation should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Individual samples were taken over 1 metre core length (diamond holes) or down hole interval (percussion holes). Mineralised intercepts were generated using a 0.1% Sn cutoff. Mineralised zones were transferred to cross sections (nominally 50 metres apart, but 25 metres apart in some areas and geological and structural information was transferred to cross sections to map outlines of mineralised zones. Cross sections were used to also generate level plans (separated by 10 metres vertical intervals) and Newmont constructed a three dimensional model depicting the configuration of the mineralised zones and non-mineralised zones. No cutting of grades was performed. No metal equivalent calculations were made.
Relationship between mineralisation	• *These relationships are particularly important in the reporting of Exploration Results.*	• Geological interpretations from cross sections and plans demonstrated the relationship between mineralised intercept length

Criteria	JORC Code explanation	Commentary
widths and intercept lengths	• *If the geometry of the mineralization with respect to the drill hole angle is known, it's nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	and true width of mineralised zones. In general zones are steeply dipping to vertical and (taking into consideration drill hole declinations) true width of mineralised zones average 76 percent, 68.5 percent and 95 percent of mineralised intercepts for diamond, percussion and modified (Jacro) percussion holes respectively. The latter drill holes were restricted to near horizontal holes within 10 metres of surface.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer Appendix III (attached) for plan view of drill collar locations and cross-sections for 5150m N (Northern Zone) and 3775m N (Southern Zone)
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practical, representative reporting of both low and high grades and/or widths should be practices to avoid misleading reporting of Exploration Results.*	• Information provided above
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to); geological observations; geophysical results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density; groundwater; geotechnical and rock characteristics, potential deleterious or contaminating substances.*	• Geomechanics – structural data provided from detailed mapping of the exploration adits and surface, in conjunction with five geomechanical holes were used to assess the competency of the rock and determine and overall pit slope of 50 degrees with 20m benches and a maximum face angle of 75 degrees. In the weathered zone, the maximum face angle should be 60 degrees. • Specific Gravity – specific gravity measurements were determined both from core (using water displacement) and the exploration adits, and values of 2.7 t/m^3 for waste and 2.8t/m^3 for ore were calculated • Metallurgical test work - The metallurgical test program was very comprehensive and thorough with extensive laboratory work done diagnosing the outcomes of pilot scale separations such as liberal use of heavy liquid separations. This work included; a) bench-scale testing at Newmont's laboratory in Danbury, Connecticut, USA on two master composites prepared from drill core representing the Northern and Southern Zones of mineralization. This was supplemented by ore characterization test work at the Australian Mineral Development Laboratories (Amdel) in Adelaide, South

Criteria	JORC Code explanation	Commentary
		Australia; b) pilot scale test work was mostly done at Amdel; this included large scale testing of commercial gravity separation units; and c)test work done at equipment vendors such as Mineral Deposits and GEC in the United Kingdom. Overall tin recovery was determined to be a function of grade and an algorithm developed but subsequent work has highlighted areas for potential upside. A tin concentrate grade of 55% Sn was demonstrated. Further information can be found at http://digsopen.minerals.nsw.gov.au/, Report GS1984/35. • Bulk sampling – an exploration adit of nominal 1.8m x 1.2m cross section was driven into each of the Northern, Hillside and Payback Zones. Adit driving was preceded by drilling an NQ sized horizontal diamond drill hole along the centreline to enable the comparison of core verses bulk sample data. The resulting study demonstrated that comparison of bulk sample Sn grades won from adits and corresponding Sn grades of samples from drill core show that for values below 0.28% Sn in the Northern Zone, bulk samples were generally higher grade than the assays of corresponding samples from drill holes. A similar situation occurred in the Southern Zone for values below 0.22% Sn.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Approval from NSW Trade & Investment is currently being sought for a future program comprising 36 holes for approximately 4,900m of drilling. It is anticipated this work will be used to enhance Mineral Resource classification and collection of metallurgical samples.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The electronic drilling data was entered by a commercial data-entry bureau service and the data entries were checked against hard copies of the data by Mr Bruce Pertzel, Geologist.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• No site visit was made by the Competent Person. The exploration and data collection phases of the Taronga project took place in the early 1980s and no exploration assets or samples remain on site.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Both the Northern and Southern zones are zones of quartz vein swarms which have been defined taking into account contemporaneous geological interpretations made by Newmont's exploration geologists and statistical analysis of the assay data. The interpretations were based on the results of 357 holes and the confidence in the geological interpretation is adequate for the categories of Mineral Resources reported for this estimate. • The distribution of tin, copper and silver is directly related to the presence and intensity of quartz veining (in the form of veinlets). The intensity of the veining is a significant geological feature which was apparent to Newmont's geologists and guided their geological interpretations.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Northern Zone dips vertically to sub-vertically and consists of a more intensely tin mineralised zone of which extends for 500m along strike (north-south), up to 125m across strike (east-west) and 300m down-dip (vertical) within a lower grade halo of mineralisation which extends for 1000m along strike, up to 250m across strike, and up to 500m down-dip. • The Southern Zone consists of four en-echelon zones of tin mineralisation which dip vertically to sub-vertically. The zones occur over an area of 800m along strike (north-south) and 350m across strike (east west). The individual zones are up to 50m in width

Criteria	JORC Code explanation	Commentary
		(east-west) and extend for up to 250m down dip (vertical).
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Sn, Cu and Ag grades have been estimated by ordinary kriging which is an accepted method for the estimation of such grades in hydrothermal tin deposits. • Lithological descriptions, geological interpretation and statistics indicated that the Northern and Southern Zones were separate geological domains. • Within the Northern Zone, two zones have been identified: a geologically determined inner zone (known as the "Mineralised Zone" by Newmont) surrounded by an outer zone consisting of a halo of Sn mineralisation. Each of these zones has been treated as a separate domain during Sn grade estimation but together for Cu and Ag grade estimation. • Within the Southern Zone, the geological interpretation of four zones previously identified by Newmont (Hillside, Hillside Extended, Payback and Payback Extended) was confirmed. Statistics suggested that these four zones are parts of a single statistical domain and variography has been performed using a sample set from all zones combined. To honour the geological interpretation, each of these zones has been treated as a separate domain during Sn grade estimation but together for Cu and Ag grade estimation. • For each domain, the grade estimates have not been extended beyond drilling to north or south along strike. The down-dip (vertical) limit of the grade estimate for each zone has not been extrapolated below the lowermost intercepts. • Gemcom Surpac software has been used for grade estimation using ordinary kriging. • A previous, pre-JORC, estimate was made by Newmont in the early 1980s assisted by Dr Isobel Clark, a leading international geostatistician. Some results of this Newmont estimate are still available including (non-JORC) reserve estimates and cross-sections through the Newmont block model. Comparisons of this estimate with the Newmont estimate are good in regards to tonnage and Sn grade at particular cut-offs, and in the spatial disposition of Sn grades in blocks. • Cu and Ag have been estimated for this resource estimate. Copper

Criteria	JORC Code explanation	Commentary
		and silver can be, and are, recovered in traditional tin processing plants. Beyond this observation, no further assumptions have been made about the processing recoveries of these by-products. • No estimation of deleterious elements or other non-grade variables of economic significance has been made. • For all domains in the grade block model, a parent a block size of 12.5m X 12.5m by 12.5m has been used. This block size is generally about one quarter of the drill hole spacing and in places is about one half of the drill hole spacing. • No assumptions were made regarding the modelling of selective mining units. • No assumptions have been made about the correlation between variables. • Blocks in the block model were flagged by zone number inside wireframes of the two Northern Zones and four Southern Zones referred to above. • Statistical analyses did not reveal any extreme grades which required cutting. • The grade estimates were validated by comparing of the mean grades of estimates in the block model against the mean grades of the assay data used and by visually checking the estimated block grades against assays in drill holes on cross-sections. • No mining data is available against which the block model can be compared.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• At the current tin price of A$24,000 and a metallurgical recovery of 70% for cassiterite, a grade of 0.1% Sn yields a recovered value per tonne of about A$17 which could be expected to cover the marginal cost of processing one tonne of ore in a modern tin processing plant. A cut-off grade of 0.1% Sn has been used for this report.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of*	• No mining factors or assumptions about mining were made beyond the assumption that the deposit, if mined, would be mined by open-cut..

Criteria	JORC Code explanation	Commentary
	determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Beyond the assumption of 70% processing recovery for Sn mentioned above, no further assumptions were made regarding metallurgical factors.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• No assumptions were made regarding possible waste and process residue disposal options.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Specific gravities of core samples of mineralisation were determined by weighing and measuring the volume of billets of core and were generally in a range from about 2.7 to 2.8 tonnes per cubic metre. • Bulk densities of material mined in exploration adits were determined by weighing complete rounds of material on a certified weighbridge. • Bulk densities of material mined in exploration adits averaged 2.7 (Hillside adit), 2.8 (Payback adit) and 2.8 tonnes per cubic metre (Northern Zone adit). For this estimate a bulk density of 2.75 tonnes per cubic metre was used.

Criteria	JORC Code explanation	Commentary
		• Given that the host rock is hornfels, a bulk density of 2.75 tonnes per cubic metre is considered reasonable.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The classification has included Mineral Resources in the Indicated and Inferred categories. No part of the Mineral Resource has been classified as Measured. • For each zone, grade estimates have not been extended beyond drilling to north or south (along strike). The vertical (down-dip) limit of the grade estimate for each zone has not been extrapolated below the lowermost intercepts. The east and west limits of the grade estimates are the geological boundaries of the individual zones. • The estimation limits just described meant that all the material for which grades were estimated could be classified as Inferred Mineral Resource. • Where multiple mineralised Sn intercepts occurred within a zone on a cross-section, the Sn resource impacted by the cross-section was classified as an Indicated Mineral Resource. • Not all samples were assayed for Cu and Ag and the estimated grades of Cu and Ag are quite low. In view of these two facts, the Cu and Ag resources were classified as Inferred Mineral Resource only.

Criteria	JORC Code Explanation	Summary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• None made.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• The relative accuracy of the resource estimates has been reflected in the application of resource classifications (see above). • This report has been based on global grade estimates of tonnes and grade as described above. • No production data is available for comparison with the estimates.

	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1 and where relevant in sections 2 and 3 also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The mineral resource estimate used by GHD to estimate an Ore Reserve was prepared by Mining One consultants. This was reported to ASX on 26 Aug 2013. In the resource Ordinary Kriging was used to estimate parent cells 12.5m(X) x 12.5m(Y)x12.5m (Z) that had been sub-celled down to 3.125m on zone / domain boundaries. The model estimates were assessed against the drill hole sample data for Sn. The geostatistical analysis used in the resource estimate reports good correlation with the 1982 Newmont work, which in itself was partially completed with internationally recognised geostatictitian Dr. Isobel Clark. Visual correlation between the Mining One estimate and the previous (non-JORC) estimate by Newmont is also high. The distinct zones (4 in the South, and 2 in the North) have been treated as separate domains for geostatistical estimation purposes. • Based on the drilling data, methods employed and resource confidence Mining One recommended that significant portions of the North and South zones can be reported as Indicated Resource, and the remainder as Inferred Resource, under the JORC (2012) guidelines. No Measured Resource has been estimated.

Criteria	JORC Code explanation	Commentary
		• Mining One used a 0.1% Sn cut-off. This was based on the expectation that with, a Sn price of A$24,000 a recovery of 70% results in a recovered value of $17 / tonne. This being sufficient to cover the marginal cost of processing a tonne of ore. • The Ore Reserves estimated and presented in this report are wholly included within the Mineral Resource reported by Mining One, in the August 2013 Resource Estimate.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Mr. Hugh Thompson, Principal Mining Engineer with GHD, is the Competent Person for this Ore Reserve. He has visited the site on 17 & 18 September, 2013. He has supervised the technical works completed in the preparation of this Ore Reserve estimate.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• Aus Tin Mining have been progressing feasibility studies on the Taronga Tin project. The major contributors have been; Geology - Mining One Mining - GHD Metallurgy - Devlure Processing - DRA Pacific Infrastructure - GHD Environmental - RW Corkey Remainder - Aus Tin Mining • These works have been conducted to a Pre-Feasibility level of study (PFS), as described in JORC (2012). GHD's Mining study forms part of this PFS. • The PFS mining study by GHD includes a Life-Of-Mine mine plan,

Criteria	JORC Code explanation	Commentary
		incorporating the appropriate modifying factors.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• A cut-off of 0.1% Sn was initially applied in determining the ore reserve. • This was based on the assessment of tin price of US$23,000; a AUD : USD forex of 0.90; average mining costs of $3.99 for Waste and $4.37 for Ore; Processing and Treatment charges of $10.33 / Tonne of Ore. • Following assessment with Pit Optimisation tools, the application of cut-off was subsequently altered to a block variable cut-off based on the blocks individual location and economic result. This is not unexpected in a deposit such as this, as the variable trucking costs for ore and waste, due to the topography and project processing and infrastructure locations, do vary across the reserve. All economic blocks covered their marginal cost of treatment.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).*	• The Taronga Tin project was last studied by Newmont Holdings Pty Ltd on behalf of the Taronga Joint Venture (Newmont) in 1982. No new field data with respect to geotechnical investigations has been gathered since then, and therefore, no new geotechnical analysis has been undertaken. Newmont relied upon geotechnical interpretation by then consultants Golders. Their original reports are not now available, although they have been summarised into the Newmont report. Therefore GHD has used the slope angles and criteria as per the 1982 Golders report, in this 2014 study. • The mining method of Truck and Hydraulic loader, using 95 Tonne trucks, and 9m^3 excavators in backhoe configuration is the primary

Criteria	JORC Code explanation	Commentary
	• *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	mining method for both ore and waste. • Pre-strip is not indicated, as the ore body outcrops. • The method used to convert Mineral resource to Ore Reserves is based upon a pit optimization identifying the economic shell within which a practical mining design can be applied. • The ore reserve estimate was created using DCF methodology within "Whittle" open pit optimization software. • A minimum mining width of 25m metres has been assumed. • No further mining loss and dilution have been added, at this time, due to o The resource estimation techniques employed with the sub-celled block-size o The intended use of small scale mining equipment o Ore mining on day shift, with available visual controls. These assumptions may be reviewed in 2014 • Inferred mineral has been used in the mine plan, and contributes a total of 4% of the LOM ore feed tonnes. The inferred material so used did not form part of the revenue basis for the determination of the economic pit, where it was classed as a waste. The material so included is all above 0.1%Sn, therefore it is above the marginal cut-off. • Infrastructure requirements for open pit mining includes; A workshop for all mobile equipment for maintenance requirements, offices, crib rooms and amenities, water dams and communication. All of these infrastructure items have allowed for.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	• Pre-feasibility Studies in 1982 by Newmont looked at a number of options leading to the current Aus Tin Mining examination of mining and processing of the deposit at a rate of 2.5 M TPA with pre-concentration by Cyclone Heavy Media, followed by grinding to liberate valuable mineral, then beneficiation processes for recovery of saleable tin concentrates; this was the route selected by Newmont. • The principal parameters for the Newmont pre-feasibility study were based on extensive metallurgical test work. This was completed to a stage which enabled establishment of design criteria for a process flow sheet, material balance, equipment sizing and selection, consumables, power consumption, general arrangement drawings, production and development schedules. • The flowsheet selected by Newmont for this simple ore was to:- Crush to - 10mm, Pre-concentrate a -10mm + 1mm fraction by Cyclone Heavy Media (HMS) using Ferro-silicon as the media, Rod Mill Grind, the HMS sinks to 750 microns in closed circuit with screens, cyclone classify and concentrate the coarse cassiterite with spirals and make a "throwaway" tail, employ shaking tables for the medium size cassiterite, regrind and recycle gravity middlings. Which is a normal approach as fines recovery is more complex, expensive and difficult to design based on laboratory tests. Tin concentrates are dressed by flotation to remove sulphides after regrinding, then thickened, filtered and bagged for despatch to smelters. • The 1982 flowsheet has been endorsed by recent (2014) review by the projects metallurgical consultants Devlure. This is the flowsheet that DRA have taken forward to process design. • This flowsheet is designed to achieve an Overall Recovery of 70% into a saleable Tin concentrate assaying 55 % Sn.

Criteria	JORC Code explanation	Commentary
		• No bulk sample has been taken in recent times. Although one may be collect later in 2014.
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• No environmental issues were identified in a previous Review of Environmental Factors (April 2013). None have since been identified that would materially alter the reserve estimation, or the mine plan. • RW Corkery & Co have been engaged to coordinate the programme of site specific studies and assessments which will comprise the Environmental Impact Statement. This will be an integral part of achieving appropriate licensing by Q4 2015. • All of the project infrastructure will be located on site, within EL7348. • Previously a study had been conducted entitled "Review of Environmental Factors - Exploration Activities at EL7348" , dated July 2013. This summarised and classified the environmental impacts as "Negligible, to low adverse" under the applicable legislation, for exploration activity. Therefore it is reasonable to believe, in the absence of other information, that the preceding statements in this section should hold true. • No waste rock characterisation has been undertaken
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	Infrastructure requirement for the project covers • On-Site Services o Roads, Pads and civil engineered structures o Water Services o Dams o Mine Waste Placement

Criteria	JORC Code explanation	Commentary
		o Building Facilities and Site Layout o Power Services o Communications • Off Site Services o Water Services o Power Services • Adequate provision to a PFS standard has been allowed for these items. • The project is in semi-rural setting of northern NSW, it has been fairly assumed that project specific accommodation will not be needed. The project is 6kms from Emmaville (pop. 247), and 35Kms from Glen Innes (pop. 5600). It is also 30Km from the New England highway.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government*	• The cost estimates are to the accuracy of ± 30% in accordance with guidelines published in Cost Estimation Handbook, AusIMM 1993 • The mining costs have been estimated as follows; o Opex - a first-principles ABC based estimate has been calibrated with check pricing obtained from a reputable mining contractor. This involved budget estimates from equipment manufacturers, labour cost assessment from specialist consultants, and quotation from key consumable suppliers for explosives. o Capex - assessment was based on quotations from manufacturers, and fleet sizes derived from the mine plan. The fleet sizes so estimated matched closely the estimates from the mining contractor. The mining contractor also supplied estimates for mobilisation and

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	and private.	site installation. Therefore credible mining cost estimates under both owner operator, and total contract miner regimes have been completed to a PFS level, in this study. • The processing costs have been estimated as follows; o Opex - first principles estimate to ±25% based on consumption rates determined by Newmont and benchmarked against industry standards, with current pricing obtained for all consumables. o Capex - first principles estimate to ±25% based on preliminary drawings and current pricing estimates for most equipment • The infrastructure costs have been estimated as follows; o Opex - negligible, and included in estimation by other disciplines o Capex - GHD prepared MTO's, and these were externally estimated by a reputable consultant cost estimator
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.*	• The basis for the US$25,000 price level is discussed below. This has been provided by Aus Tin Mining. • Aus Tin Mining has adopted an AUD:USD rate of 0.90 based on the Reserve Bank of Australia's long term target rate of 0.85 and rates provided by Australia's four largest banks. • Concentrate transportation charges have been based on a quotation from a reputable Australian transport company. • Aus Tin Mining provided a number of tin smelters and trading companies with the anticipated tin concentrate specification for each of the three zones of mineralisation. They have indicated the acceptability of the concentrate for smelters.

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		• Treatment and refining charges are based on preliminary terms received from smelting companies.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• As discussed in the PFS report; • Global tin consumption for 2013 was 358kt. Since the adoption of lead free solder for the global electronics industry, tin consumption has generally increased Year on Year in line with global GDP growth. Consumption is forecast to grow to 394kt by 2016 but new growth opportunities in lithium ion batteries, stainless steel and fuel catalysts could increase demand further. • Global refined tin production for 2013 was 347kt, with the majority of mine production coming from China (33%), Indonesia (32%) and Peru (13%). Over 56% of all tin mined is from underground operations and alluvial mining accounts for approximately 38%. Decreasing grades, increased operating costs and more stringent social, safety and environmental obligations are impacting in particular alluvial mining in Indonesia. In 2017 one of the world's largest mines (San Rafael in Peru accounting for approximately 10% of global mine production) is forecast to exhaust its underground hard-rock reserves, exacerbating the market deficit unless new production is sourced. • A global supply deficit has been growing since 2010 with global stocks declining over the same period. At the end of December 2013 current stocks were estimated at 3.9 weeks, the lowest value since the end of June 2008. Stocks are expected to further decline further to 2.8 weeks by the end of 2016. • During the last three years tin has traded within a range of US$18,616/t and US$32,464 at an average of US$23,098/t. Consensus analyst forecasts the tin price to rise to US$27,875/t by

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		2015. ITRI report the marginal cost of tin production at US$25,000/t. • Considering the consensus forecasts for tin price and marginal cost of production, US$25,000 been adopted for the base case.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• The project economic analysis has been undertaken by Aus Tin Mining. It is based on a life of mine production schedule compiled by GHD. This production schedule consists mainly of Probable Ore Reserves, with 4% of Inferred Resources included in the LOM schedule. • The costs used in the Aus Tin Mining analysis are those supplied by the above nominated PFS study participants. Namely; GHD (Mining) , DRA (Processing), GHD (Infrastructure) and Aus Tin Mining (remainder). • A project discount rate of 8% annually has been used to estimate the NPV. No sensitivity on the NPV has been undertaken. • No inflation is included in the economic analysis.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• No social or community issues that would materially affect the Ore Reserve Estimate, have been disclosed to date. • Negotiations with relevant landholders are proceeding as required. • A comprehensive community engagement plan is being developed by RW Corkery as part of the Environmental Impact Statement development.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.*	• No naturally occurring risks attributable to climatic or seismic conditions have been identified • No other material agreements are in place. • As discussed in the environmental section of this table, there are

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	• *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	reasonable grounds to believe that the regulatory timeline as set out in the PFS document will be achieved.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The Ore Reserve is based on the August 2013 Resource estimate as reported by Mining One. • The Ore Reserve is classified as Probable in accordance with the JORC 2012 Code, corresponding to the resource classification of Indicated. • No Inferred Mineral Resources were included in the Ore Reserve estimate. • Some 81% of the Aug 2013 Indicated Resource has been converted through to probable Ore Reserve. This conversion appropriately reflects the Competent Persons view of the deposit, and its conversion potential. Particularly given the outcropping of the ore zone, the clearly defined host geological structures and the density of drilling. • 100% of the Probable Ore Reserves are derived from Indicated Mineral Resources.
Audits or reviews	• *Audits or reviews*	• The estimate of mining reserves have been internally audited by another senior mining engineer at GHD, who has not been involved

Criteria	JORC Code explanation	Commentary
		with this mining study.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The estimated Ore Reserves and mining method are in the opinion of the Competent Person appropriate for this style of deposit. • Industry standards tools including Surpac, Whittle, TALPAC and XPAC have been used competently to create the Ore Reserve and produce the LOM mine plan. • The Ore Reserve is discretely divided into the North and South pits. This is appropriate as these would be mined as two separate pits.