# CONSOLIDATED
## TIN MINES LIMITED

# ASX ANNOUNCEMENT / MEDIA RELEASE

## EINASLEIGH PROJECT: 152,000t Copper metal JORC Resource at Kaiser Bill Deposit

Consolidated Tin Mines Limited (ACN 126 634 606) (ASX Code: CSD) ("Company") is pleased to announce an updated 2012 JORC Resource for its Kaiser Bill Deposit at their Einasleigh Project.

## Highlights

➢ JORC 2012 Mineral Resource estimated for Kaiser Bill Copper deposit

➢ Total Indicated and Inferred Mineral Resource of 18.39 million tonnes at 0.83% Cu for 152,000 tonnes of copper above 0.5% Cu cut-off

➢ Estimated 3.45 Moz Ag

➢ 10 km from Consolidated Tin's Chloe and Jackson Zn, Pb, Cu, Ag Deposits

(Refer to ASX announcement dated 18th June 2018)

## SUMMARY

The JORC-categorised Mineral Resources at May 2018 for the Kaiser Bill deposit have been classified by Mining Associates as Indicated and Inferred confidence categories on a spatial, areal and zone basis. The resource is being reported at a 0.5% Copper cut off above the 150 metre RL reflecting the open pit potential.

The Mineral Resource Estimate for the Kaiser Bill deposit as at May 2018 is summarised below.

| Resource Category | Tonnes (Mt) | Cu Grade (%) | Cu Metal (t) | Ag Grade (g/t) | Ag Metal (koz) |
|---|---|---|---|---|---|
| Indicated | 14.38 | 0.83 | 119,000 | 5.41 | 2,190 |
| Inferred | 4.07 | 0.83 | 34,000 | 7.29 | 950 |
| **Total** | **18.39** | **0.83** | **152,000** | **5.83** | **3,450** |

## Property Location

The Kaiser Bill prospect is located about 8 km west of Einasleigh, and approximately 250 km south west of Cairns and 55 km south east of Georgetown, north Queensland. The prospect is part of Consolidated Tin Mines Einasleigh Project and drilling was carried out on MLA30211 within Exploration Permit for Minerals (EPM) 13072 (Figure 1).
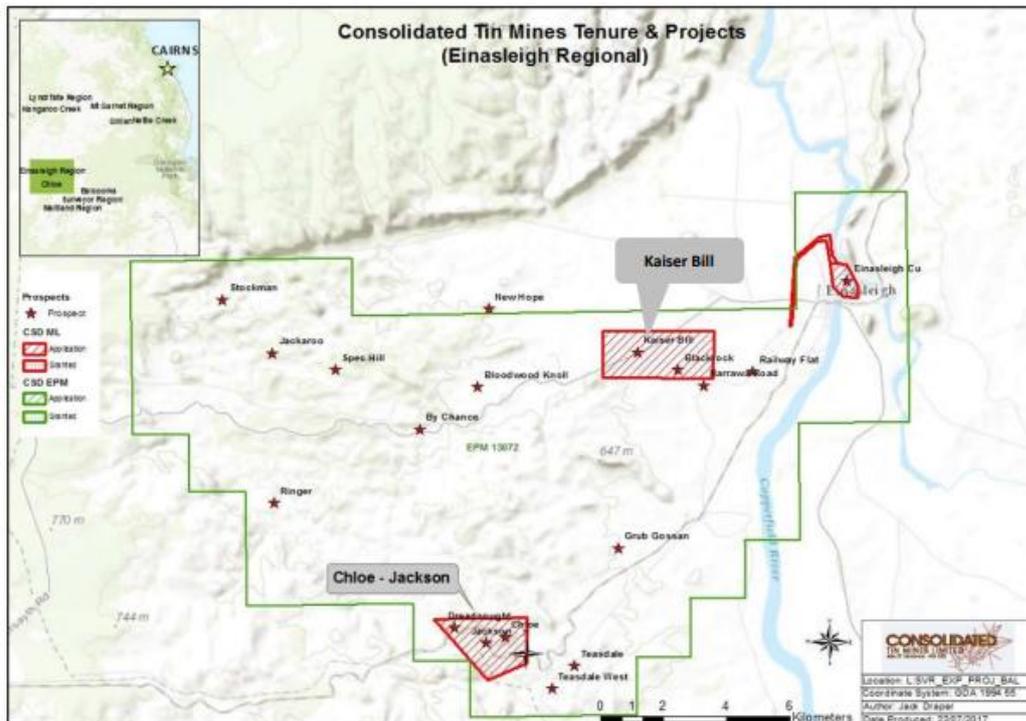
*Figure 1: Location of prospects on EPM13072 and Einasleigh*

## Previous Exploration

Kaiser Bill is an undeveloped copper- silver deposit in the Einasleigh area which also contains the Einasleigh Cu deposit and Chloe-Jackson Pb-Zn-Cu-Ag deposits.

The Kaiser Bill prospect was probably discovered during construction of the railway from Cairns to Forsayth by German interests, prior to World War 1 (hence the name). The tenement area has historically received periodic exploration. Some drilling was done by MIM in the 1950s, but little else was done until Teck-Cominco in 2003.

Between 2005 and 2010 Copper Strike Limited (CSE) undertook resource definition drilling and resource estimates of the Kaiser Bill deposit and the 2005 drilling was included in the Einasleigh Feasibility Study completed in 2008.

## Local Geology

The Kaiser Bill deposit is hosted within a sequence of quartz-feldspar-biotite metasedimentary gneiss overlain by a massive felsic leucogneiss with the copper mineralisation occurring as chalcopyrite within quartz-pyrite-pyrrhotite-magnetite disseminations, stringers and breccia-fill. The contact between the two gneissic units is undulating and dips between 30° to 60° to the SSE and is interpreted to define the northern limb of a gently WSW plunging synform.

Mineralisation occurs within a broad silica-chlorite alteration zone comprising disseminated sulphides and magnetite. Numerous intrusive lithologies have been recognised within the deposit, including a foliation parallel sequence of amphibolite dykes and sills, later irregularly oriented pegmatites and intermediate to mafic dykes. The last two sets of intrusive lithologies cross-cut and stope out the copper mineralisation.
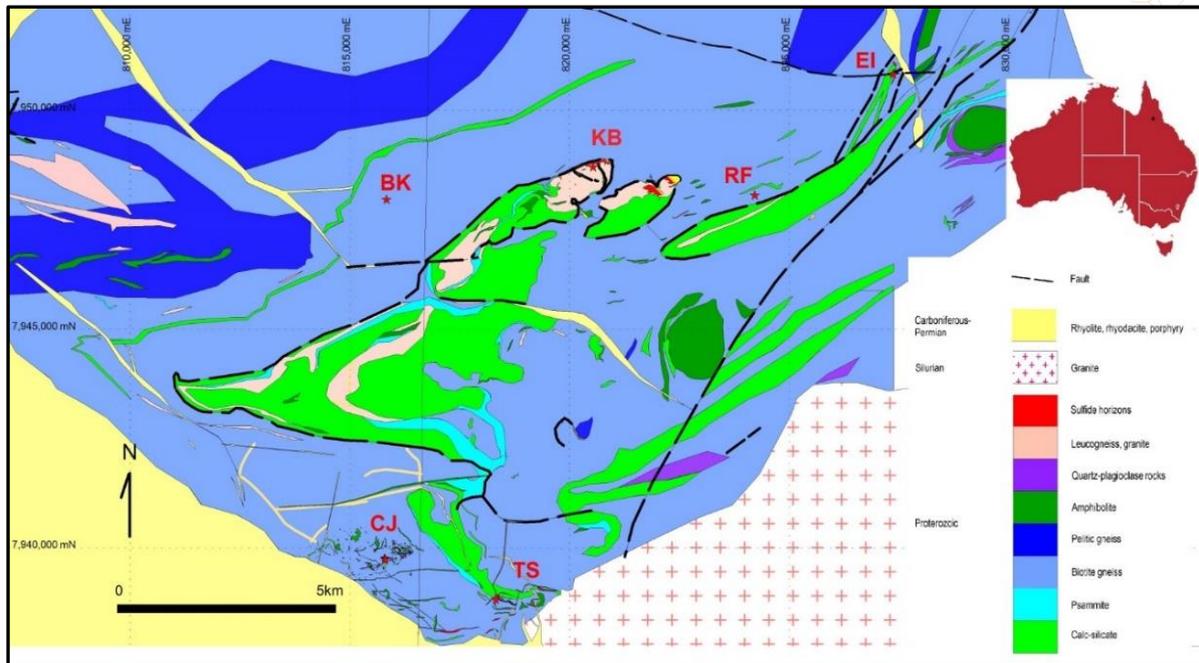
*Figure 2: Local Geology Map of Kaiser Bill deposit (KB)*

## Mineralisation

Kaiser Bill has an extensive gossan, about 1km long, above pyrite-pyrrhotite-magnetite-chalcopyrite disseminated, stringer, vein to massive sulphide mineralisation. The gossan is stratabound, and sits astride the contact of leucogneiss and overlying biotite gneiss (Figure 3). A calc-silicate horizon a few metres wide occurs at this contact and is quartz-epidote altered when closely associated with mineralisation.

The geometry of the deposit is that of a thick massive central zone, with a southerly dip and well-developed west-southwest plunge, feathering into prongs both up- and down-dip (Figure 4). The mineralisation envelope diverges from the leucogneiss-biotite gneiss contact.
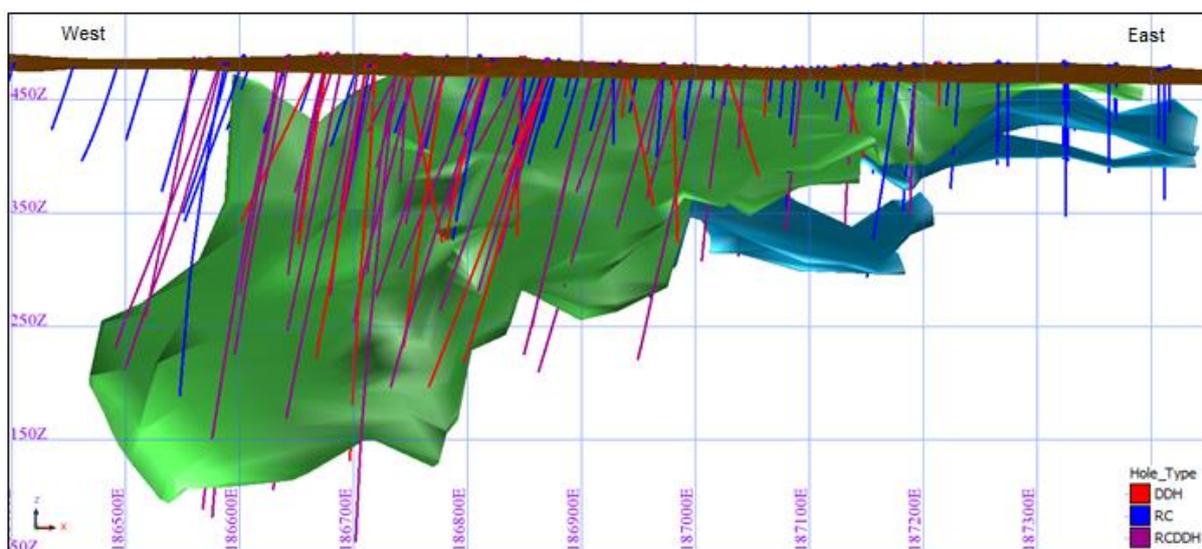


*Figure 3: Kaiser Bill Drill Hole Lone Section (holes by drill hole types)*
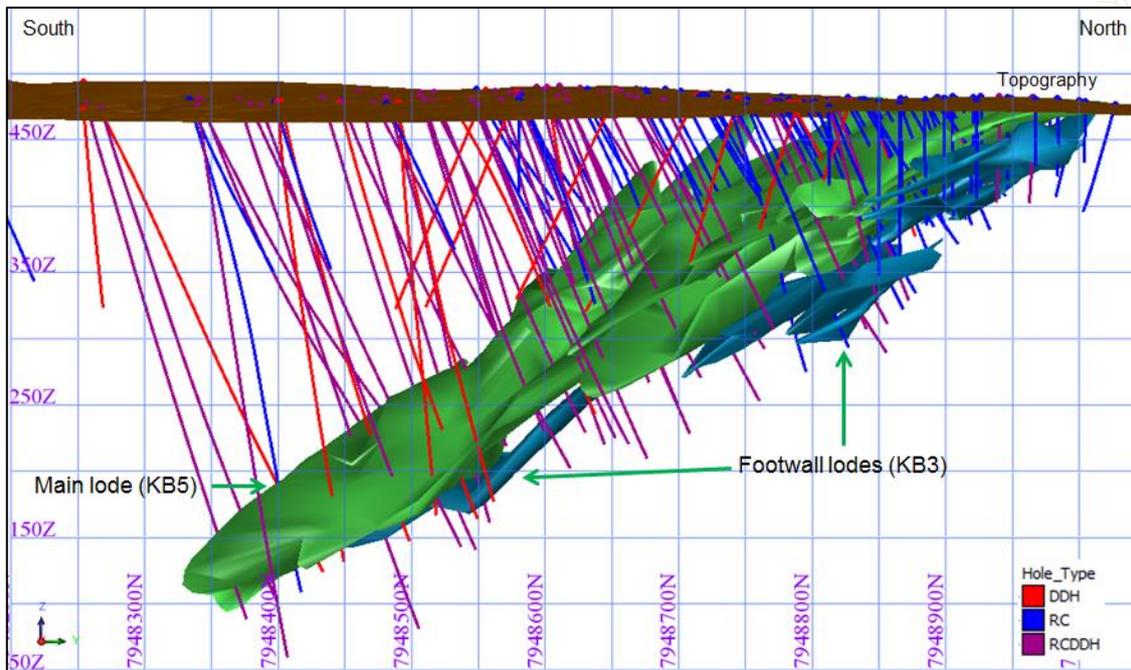
*Figure 4: North- South view of Kaiser Bill deposit (Looking toward 270 degrees)*

## Drilling Techniques

Drilling has been undertaken using Reverse Circulation (RC) and diamond (DD) methods (Figure 6). Often a combination of RC pre-collars with diamond drill tails (RCDD) has been used.

Drilling considered in the resource estimate included:

- RC and diamond drilling undertaken by Copper Strike Limited (CSE) between 2005 and 2010
- Diamond drilling undertaken by Teck Cominco (TEC) in 2003
- Diamond drilling undertaken by Wanguo International Mining Group (WG) in 2015

The Company commenced RC and diamond drilling at Kaiser Bill in 2015.

## Sampling Techniques

The bulk of the drilling and sampling for the drill holes contained within the resource estimate has been undertaken in 8 different stages of drilling. The majority (84%) of the drilling has been undertaken by CSE. Drilling and sampling methods during this period were well documented.

During the Stage 1 and 2 drilling programs, RC samples were sub-sampled using a PVC spear. For Stages 3-6 RC sampling was undertaken predominantly at the rig using a riffle splitter (single or multi-tier) providing a 2-3kg sample. RC samples were taken on 1m intervals and were recorded as having good recovery which was supported by the recorded sample weights from Stage 2 onwards.

Diamond samples for routine analysis were taken predominantly from half NQ core and submitted for assay. Due to the competent nature of the rock, core recovery is described as excellent. Where data has been recorded recoveries are >95%. No significant core loss has been recorded in the mineralised intervals.

Only intervals visually containing mineralisation were selected for analysis.

## Sample Analysis Methodology

Analyses during the CSE period (94%) were completed by ALS Laboratories with routine assays completed using an ICP technique (ME-ICP41) and over-range assays completed using a mixed acid digest for ore grade samples with an ICPAES finish (OG46).

Samples collected during the Wanguo period (4%) were sent to SGS Laboratories and were also completed using an ICP method (ICP41Q) with over-range assays being analysed using AAS43Q.

During both programs quality control samples such as field duplicates, standards and blanks have been routinely inserted into the routine sample stream. Both ALS and SGS insert their own set of internal quality control as per industry standard. All standards and blanks returned within acceptable limits, and field duplicates showed good correlation.

## Estimation and Modelling Techniques

Statistical and geostatistical analysis was carried out by Mining Associates within Surpac 6.8.1.

Estimation of all elements was completed using ordinary kriging into 25m (X) by 25m (Y) by 10m (Z) parent blocks and 3.125m (X) by 3.125m (Y) by 1.25m (Z) sub-blocks.

Two metre composites was selected as appropriate and high grade outliers (Cu, Ag, Au, Fe and S) within the two metre composite data were capped, only minimal grade-capping was required. A top-cut has been applied to the un-mineralised samples to negate the influence of random higher grade samples over-inflating the un-mineralised blocks.

Grade continuity analysis within Cu domains that define the mineralisation has been undertaken in Snowden Supervisor software for Cu, Ag and Au. Similarly, the Fe domains have been used to undertake continuity analysis for Fe and S.

The interpolations have been constrained within the mineralisation wireframes and undertaken in two passes with the mineralisation wireframes utilised as hard-boundaries during the estimation. The Cu mineralisation domains have been used to constrain the estimation of Cu, Ag and Au with Fe and S estimated inside the Fe mineralisation domains.

The resource has been validated visually in section and level plan along with a statistical comparison of the block model grades against the composite grades to ensure that the block model is a realistic representation of the input grades. No issues material to the reported Mineral Resource have been identified in the validation process.

## Classification Criteria

The Mineral Resource was classified in accordance with JORC 2012, based on data quality, drill density, number of informing samples, kriging efficiency, conditional bias slope, average distance to informing samples and deposit consistency (geological continuity).

Indicated Mineral Resource is defined as those portions of the deposit with a drill spacing of 50 m x 50 m and demonstrate a high level of confidence in the geological continuity of the mineralisation.

Inferred Mineral Resource is defined as those portions of the deposit covered by a drill spacing of greater than 25 m x 25 m, or those portions of the deposit with a smaller number of intersections but demonstrating a reasonable level of geological confidence.

## Cut-off Grade

Mineralisation has been reported above a 0.5% Cu cut-off grade. The following key matters likely to influence the economic viability of the deposits are presented in Table 1.

| Parameter | Unit | Metric |
|---|---|---|
| Mill throughput | Mtpa | 2.00 |
| Capital Cost | AUD$/t ore | $5.41 |
| Assumed Strip Ratio | T | 1:8 |
| General and Admin cost | AU$/t ore | $1.20 |
| Processing cost | AU$/t ore | $16.00 |
| Average mining cost | AU$/t ore | $10.00 |
| Total Cost | AU$/t ore | $32.61 |
| Copper Price | AU$/lb | $4.10 |
| Silver Price | AU$/oz | $21.88 |
| Average recovery – Cu | | 90% |
| Average recovery – Ag | | 60% |
| *CUT-OFF GRADE* | | |
| *Copper (Cut off %)* | | *0.45* |

*Table 1: Key Assumptions for 'Reasonable Prospects of Economic Extraction'*

## Mining and Metallurgical Methods

The mineralisation above the 150 mRL has been deemed to be potentially accessible by open cut mining methods. No metallurgical factors have been applied to the in-situ grade estimates.

## MINERAL RESOURCE ESTIMATE STATEMENT

The JORC categorised Mineral Resources for the Kaiser Bill deposit have been classified as Indicated and Inferred confidence categories on a spatial, areal and zone basis and are listed in Table 2.

| Resource Category | Tonnes (Mt) | Cu Grade (%) | Cu Metal (t) | Ag Grade (g/t) | Ag Metal (koz) |
|---|---|---|---|---|---|
| Indicated | 14.38 | 0.83 | 119,000 | 5.41 | 2,190 |
| Inferred | 4.07 | 0.83 | 34,000 | 7.29 | 950 |
| **Total** | **18.39** | **0.83** | **152,000** | **5.83** | **3,450** |

*Table 2: May 2018 Mineral Resource Estimate for the Kaiser Bill Deposit (>0.5% Cu)*

The full report compiled by Mining Associates Pty Ltd can be located on the Company's website: www.csdtin.com.au.

## COMPETENT PERSON'S STATEMENT

"The information in this report that relates to Mineral Resources is based on information compiled by Mr I. Taylor who is a Certified Professional by The Australasian Institute of Mining and Metallurgy and is employed by Mining Associates Limited. Mr Taylor has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears".

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The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

# Appendix 1 JORC Code, 2012 Edition – Table 1

Notes on data relating to the Mineral Resource Estimate for the Kaiser Bill deposit.

Data provided by Consolidated Tin Mines Limited and verified by MA.

## SECTION 1 SAMPLING TECHNIQUES AND DATA

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

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling techniques* | • *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* | • The following report details the historical data, checks, validation and methodology used to generate the updated Mineral Resource Estimates (MRE) for the Kaiser Bill deposit<br><br>• Data for the Kaiser Bill deposit has been collected over a number of exploration campaigns by different companies. The majority of the data used for the MRE however has been collected by Copper Strike and Consolidated Tin Mines.<br><br>• A total of 169 drill holes utilising Reverse Circulation (RC) and Diamond (DD) drilling methods have been completed for a total of 27,224 m at the Kaiser Bill deposit.<br><br>• Of this drilling 12 holes for 3,780 m were completed by Consolidated Tin. |
| | • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | • Holes have been drilled predominantly towards the north-west with dips of predominantly 50-70 degrees to optimally intersect the moderately south-east dipping mineralised zones<br><br>• The diamond drill core has been cut longitudinally in half if an NQ hole, or quarter core if of HQ size. Sampling was undertaken at predominantly 1m intervals with a range of 0.5 m length to 1.4 m length to accommodate changes in geology and mineralisation. Metallurgical samples were taken from half the HQ core samples.<br><br>• RC chip samples were sampled at 1 m intervals and a 1/8th split using a riffle splitter was taken as a sample for analysis.<br><br>• Sample intervals are taken only over mineralized intervals with 3-5m of unmineralised material also sampled above and below the interval. Mineralisation is visually identified by the presence of economic minerals.<br><br>• The drill hole locations have been surveyed up by an external contract surveyor using a DGPS (Differential Global Positioning System).<br><br>• Downhole surveys were undertaken using a single shot Eastman camera approximately every 30 to 50 m. |

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| | | • Sub-samples of ~3kg were sent to the laboratory for assaying. A total of 9,249 samples for the Kaiser Bill deposit have been sent for analysis. The samples sent to ALS followed standard ALS crushing and pulverization procedures followed by a 4-acid digest to effect as near to total solubility of the sample as possible.<br><br>• Of the 9,249 samples assayed, 3,948 identified as being mineralised are utilised in the resource.<br><br>• ALS, SGS laboratories, CSE, SPM and CSD inserted QC samples into the routine sample stream to monitor sample quality as per industry best practice |
| | • *Aspects of the determination of mineralisation that are Material to the Public Report.* | • The majority of the sampling, surveying, geological logging, sample preparation and analysis undertaken during the CSE exploration period was carried out under the guidance of a detailed Exploration Standards and Procedures Manual (2008) which follows industry standard practices for data collection and validation. The procedures used prior to this exploration are unknown but account for <3% of the data and are therefore not considered material to this report. Exploration undertaken post-CSE followed the established CSE procedures. |
| ***Drilling techniques*** | • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | • RC drilling utilized 6m rods whilst DD drilling used 3m drill rods. Diamond drilling has employed predominantly 47.6mm diameter NQ2 'standard tube' core drilling methods. RC drilling has been completed using a 5.25 or 5.5 inch diameter face sampling hammer bit.<br><br>• Diamond drill core was orientated at regular intervals to facilitate structural logging. Core lengths and orientations are checked by trained company personnel (geologist or field technicians) |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br><br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br><br>• *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.* | • Bulk RC sampled intervals are weighed to provide an indication of recovery. Of the >4,200 weights taken >80% fall within the expected ranges for a 1 m interval. Due to the nature of the mineralisation it would be expected that higher grade intervals have higher weights. This is not clearly reflected in the data.<br><br>• Two methods of determining core recovery have been undertaken during the various drilling programs at Kaiser Bill. The first method compares the drilled interval (drill run) against the length of the core returned. The second method compares a one metre interval against the core returned. The second process is thought to provide greater precision in identifying zones of poor recovery. Of the >7,690 recovery measurements taken 98% represent >93.3% recovery. No relationship between recovery and grade is observed. |

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| | | • The use of high quality methods such as RC and diamond drilling as well as the measuring and monitoring of recovery has been employed to maximise recovery. |
| *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.*<br><br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br><br>• *The total length and percentage of the relevant intersections logged.* | • All drill holes have been logged in full and record standard qualitative data such as lithology, alteration, mineralisation, weathering and oxidation. Diamond core was quantitatively logged for geotechnical parameters such as recovery and RQD. Structural data such as faults, fractures and veins are also recorded.<br><br>• All RC precollar intervals were wet-sieved and stored in chip trays<br><br>• All logging was transferred into Excel spreadsheet templates at the time of drilling. These spreadsheets have been imported into a Datashed Database system where validation on logging has been performed<br><br>• All diamond core and chip trays (from RC drilling) were photographed in a wet and dry state. |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br><br>• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br><br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br><br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br><br>• *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.*<br><br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • Both RC and diamond core samples have been utilised in the Kaiser Bill Resource<br><br>• RC sampling was predominantly undertaken using a multi-tiered riffle splitter attached to the base of the drill rig cyclone and providing a 1/8th spilt ranging from 3-5kg.<br><br>• Diamond holes were sampled taking a representative ½ core split of the NQ2 diamond drill core or 1/4 core split of the HQ2 diamond drill core. Drill core was cut longitudinally in half using diamond saws just to the side of a centre reference line. Sampling is nominally on 1m intervals but is varied to account for lithological and mineralisation contacts with minimum lengths of 0.5m and maximum lengths of 1.4m allowable. Metallurgical samples were taken from ½ HQ2 core on selected intervals.<br><br>• Field duplicate samples were only applied to the RC sampling and were selected by the geologist, from anywhere within a sampled mineralised interval. These samples, totalling 69, were collected by resplitting the original bulk sample bag. The performance of the 69 RC duplicate samples has been checked for the elements estimated within the resource and are within acceptable limits (<+/-3.5%) relative to the mineralisation and duplicate method.<br><br>• Sample sizes are considered to be appropriate for the mineralisation present at. |
| *Quality of assay data* | • *The nature, quality and appropriateness of the assaying and laboratory procedures* | • The bulk of the samples were submitted to ALS Chemex in Townsville and followed standard ALS |

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| **and laboratory tests** | used and whether the technique is considered partial or total.<br><br>• 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.<br><br>• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established. | crushing (CRU21) and pulverization (PUL23) procedures then underwent digestion via a 4-acid digest (ME-ICP61s) to effect as near to total solubility of the sample as possible.<br><br>• All samples were assayed for:<br>   ◦ Au Fire assay AA25;<br>   ◦ 39 elements; Ag Al As Ba Be Bi Ca Cd Co Cr Cu Fe K La Mg Mn Mo Na Ni P Pb Rb S Sb Sr Ti V W Zn;<br><br>• For > 1% Cu, Pb, Zn and >100ppm Ag, re-assay using OG46 was undertaken.<br><br>• The remaining samples (4%) were submitted to SGS Laboratories in Townsville and followed standard SGS crushing and pulverization procedures. These samples also underwent digestion via a 4-acid digest to effect as near to total solubility of the sample as possible. Over range elements are re-assayed using an ore grade analytical method<br><br>• Sampling techniques, other than drill hole samples already discussed, have not been utilised as part of the resource update<br><br>• Field QAQC procedures included the insertion of field duplicates (only RC samples), commercial pulp blanks and standards. Insertion rates of QC samples was at a rate of 1 every 15 samples.<br><br>• Performance of standards for monitoring the accuracy, precision and reproducibility of the assay results received from ALS and SGS have been reviewed. The standards generally performed well with results falling within prescribed two standard deviation limits.<br><br>• The performance of the pulp blanks have been within acceptable limits with no significant evidence of cross contamination identified<br><br>• Both ALS and SGS laboratories undertake industry standard QC checks to monitor performance.<br><br>• No QC data is available for the remaining samples which makes up <1% of the data and is not considered material |
| **Verification of sampling and assaying** | • The verification of significant intersections by either independent or alternative company personnel.<br><br>• The use of twinned holes.<br><br>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.<br><br>• Discuss any adjustment to assay data. | • Samples were selected by experienced geologists based on the presence of visible mineralisation. Significant intersections which are bounded by barren material confirm the visual selection.<br>To date no twin holes have been drilled at the Kaiser Bill deposits however 4 large diameter holes have been drilled within 10m of RC holes and returned similar results<br><br>• Historical logging data was recorded on paper and then entered into an Excel spread sheet or logged directly into excel. As part of the current resource |

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|---|---|---|
| | | update all original Excel logging spreadsheets and original laboratory assay files have been sourced and imported into the CSD Datashed database.<br><br>• Assay values designated less than detection are assigned a value 0.5 x LTD limit value. Where the assay value is returned as insufficient or no sample then the assay value is set to null. |
| *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.*<br><br>• *Specification of the grid system used.*<br><br>• *Quality and adequacy of topographic control.* | • The drill hole collar locations were surveyed by Ausnorth Consultants based in Cairns using a differential Real Time Kinetic (RTK) GPS to an accuracy of 0.01m.<br>Drill holes are drilled predominantly to the north north-west with dips ranging from 60-90 degrees. Azimuths were initially set up using a compass and the inclination was set up using a clinometer on the drill rig mast.<br><br>• All drill hole collars have been surveyed in MGA GDA 94 Zone 55<br><br>• In 2007 a detailed aerial mapping project was undertaken to develop accurate topographical control over the Kaiser Bill resource area. High resolution aerial digital images were taken at 1:11000 scale and cross referenced to ground control points to enable the modelling of surface points to within 250mm of their true elevation.<br><br>• All planned collar locations are marked in the field using a handheld GPS with an accuracy of +/-2m and RL's are allocated to the drill hole collars by using the detailed DTMs. On completion of drilling holes have been picked up using DGPS.<br><br>• Downhole surveys have been undertaken predominantly with a single shot Eastman camera |
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br><br>• *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.*<br><br>• *Whether sample compositing has been applied.* | • The drill hole spacing in the deposit ranges from 50 m by 50 m in the better drilled parts of the deposit to 100 m by 100m in the along strike and down dip extensions of the deposit in the areas covered by the MRE<br><br>• The data density is sufficient to demonstrate grade continuity to support a Mineral Resource estimate (MRE) under the 2012 JORC code<br><br>• Intersections reported in this report are interval weighted average composites of smaller sample intervals as is common practice. |
| *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.*<br><br>• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this* | • The nature and controls on mineralization at the Kaiser Bill deposit is considered to be well understood in the area of the MRE. Holes are predominantly drilled towards the north north-east at an average dip of 70 degrees to optimally intersect the moderate south-east dipping mineralised zones. |

| | | |
|---|---|---|
| | *should be assessed and reported if material.* | • Based on the current understanding sampling is considered to be unbiased with respect to drill hole orientation versus strike and dip of mineralisation. |
| **Sample security** | • *The measures taken to ensure sample security.* | • Chain of custody processes for the historical drilling is unknown |
| **Audits or reviews** | • *The results of any audits or reviews of sampling techniques and data.* | • No other audits or reviews are known |

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

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral tenement and land 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 park and environmental settings.*<br><br>*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.* | • The MRE has been undertaken on drilling carried out on MLA30211 held by Consolidated Tin Mines Pty Ltd (CSD) and falls within EPM13072. CSD has purchased all Snow Peak Mining (SPM) tenures under an Asset Sale Agreement. However the transfer of the tenures is yet to take effect, therefore they are still officially registered as being held by SPM<br><br>• The Mining lease is subject to an Indigenous Land Use Agreement and the tenement land is subject to the Ewamian People #3 determination area.<br><br>• The tenements are in good standing and no known impediments exist. |
| ***Exploration done by other parties*** | *Acknowledgment and appraisal of exploration by other parties.*<br><br>• The district has an extensive exploration history and the following summary is focused on that work directly related to the Kaiser Bill areas.<br><br>• Much of the focus for exploration was on the Einasleigh mine or in the surrounding area. In 2003 work completed on the tenements by Teck Cominco Australia focused on various prospects including Kaiser Bill, Einasleigh Copper Mine and Teasdale Cu-Au-Ag prospects and the Railway (formally Mount Misery). now Chloe-Jackson) and Bloodwood Knoll Pb-Zn-Ag prospects.<br><br>• Ground magnetic and EM surveys (either moving or fixed-loop) were undertaken at Kaiser Bill, Einasleigh Copper Mine, Teasdale, Railway and Bloodwood Knoll. This work was supplemented by detailed structural mapping and soil geochemistry at all prospects except the Einasleigh Copper Mine.<br><br>• Between 2006 and June 2008 Copper Strike (CSE) undertook extensive drilling on the Kaiser Bill Deposits. This data formed the basis for a MRE and contributed to the Einasleigh Copper Project Feasibility Study in June 2009<br><br>• In 2015 Consolidated Tin Mines entered into a Farm-in agreement with Hong Kong based mining company Wanguo International Mining Group (Wanguo). Under the terms of this agreement drilling was undertaken on both the Kaiser Bill deposits for a total of 7 holes.<br><br>• In July 2017 an updated MRE was undertaken to incorporate holes drilled during the Wanguo farm-in as well as to update the MRE to JORC 2012 compliance. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Geology** | *Deposit type, geological setting and style of mineralisation.* | |

- The base metal deposits in the Einasleigh district (including the Kaiser Bill) occur within the Proterozoic Georgetown Inlier. The Kaiser Bill deposit is considered to be an Iron Oxide Copper Gold deposit.

- Copper mineralisation at Kaiser Bill occurs as chalcopyrite associated with quartz-pyrrhotite-pyrite-magnetite within zones of disseminations, stringers and breccias hosted within a sequence of quartz-feldspar-biotite gneiss (metasediments) which is overlain by a massive felsic leucogneiss (granitic gneiss). The mineralised zones outcrop as massive irregularly shaped gossans extending westwards for some 500m to 186900E, over widths of between 50 and 70m. The gossanous zone continues further to the west-south-west as scattered, discontinuous and narrow bodies over widths of between 20 and 30m.

- Numerous medium to coarse grained amphibolite units, of 1 to 15 m in thickness, occur throughout the sequence. They are sub-parallel to foliation, commonly display chilled margins and probably represent mafic sills and dykes intruded into the sequence during diagenesis or early stages of metamorphism. The entire sequence is intruded by irregular pegmatite dykes and sills. Several intermediate to mafic dykes, presumed to be related to the Permo-Carboniferous thermal event and loosely termed dolerite in the logging, intrude the sequence and cut the mineralisation.

- Mineralisation is has been grouped into the following categories:

- Massive to semi-massive sulphides (>25%): commonly brecciated with clasts of white (vein?) quartz and altered country rock infill by magnetite pyroxene (altering to amphibole and chlorite), pyrrhotite, chalcopyrite (pyrite) with trace molybdenite; these zones range from 20 cm up to several metres in width and contain the higher copper grades (5 to 14% Cu) with a high proportion of Fe (>15%) as pyrrhotite or magnetite; however many samples contain low chalcopyrite with grades reporting <1% Cu. These sulphide rich lenses display sharp contacts which are generally sub-parallel to foliation.

- Stringer and disseminated sulphides (5 to 25%): altered gneiss with moderate development of disseminated magnetite and stringer and disseminated pyrrhotite, chalcopyrite, pyrite; these form wider zones over several to tens of metres and contain low to moderate grades of up to 5% Cu.

- Sulphide silica chlorite altered gneiss with disseminated magnetite pyrite, pyrrhotite and chalcopyrite (<5% sulphides) over broad widths of tens of metres with copper grades generally <1% and occasionally up to 2% Cu.

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **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:*<br><br>  o *easting and northing of the drill hole collar*<br><br>  o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br><br>  o *dip and azimuth of the hole*<br><br>  o *down hole length and interception depth*<br><br>  o *hole length.*<br><br>• *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 the report, the Competent Person should clearly explain why this is the case.* | Refer to diagrams, tables and appendices within this report |
| **Data aggregation methods** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*<br><br>• *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 aggregations should be shown in detail.*<br><br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • Grades are reported as down-hole length weighted averages with no top cut applied on the reporting of grades<br><br>• Only those intervals deemed to be significant are given in this report.<br><br>• No metal equivalent calculations have been reported |
| **Relationship between mineralisation widths and intercept lengths** | • *These relationships are particularly important in the reporting of Exploration Results.*<br><br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br><br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | • The results are reported as downhole lengths only<br><br>• Drill holes are drilled perpendicular to the general north-east strike of mineralization. Mineralisation at Kaiser Bill is interpreted to be a broad alteration zone with zones of higher grades (>0.5% Cu) within. The mineralisation dips moderately (40-50 degrees) to the south-east<br><br>• True widths have not been calculated for the intercepts however the volume and grade are reflected in the MRE |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *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 be limited to a plan view of drill hole collar locations and appropriate sectional views.* | • Refer to diagrams, tables and appendices in this report |
| *Balanced reporting* | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | • This information is not appropriate to reporting of a Mineral Resource Estimate |
| *Other substantive exploration data* | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey 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.* | • Historical geophysical survey data has been undertaken over the deposit areas and formed the basis for their initial discovery.<br>• Initial historical testwork was undertaken during the CSE Feasibility November 2008 and indicated that the waste rock has low acid forming potential<br>• RQD and structural logging has been undertaken to assist with future geotechnical criteria |
| *Further work* | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br><br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Ongoing exploration work will include further drilling to confirm and extend existing targets where appropriate. The high grade portion of the deposit plunges to the south west and remains open at depth. |

## 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 |
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| **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.*<br><br>• *Data validation procedures used.* | • Original drill hole data including collars, surveys, lithologies, samples and laboratory assay files have been sourced and imported into CSD's Datashed database. Assay data is imported directly from original lab files into Datashed with no prior manipulation of results Datashed has robust validation and constraints incorporated into it to ensure validated data is readily available for fit for purpose use. The database is managed by a database administrator employed by Consolidated Tin.<br><br>• MA has undertaken a high level review of all files for syntax, duplicate values, from and to depth errors and EOH collar depths.<br><br>• Once loaded into 3D software, MA has completed a review of all survey data by visually validating all hole traces for consistency. |
| **Site visits** | • *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*<br><br>• *If no site visits have been undertaken indicate why this is the case.* | • The Competent Person visited the Kaiser Bill deposit in April 2018.<br><br>• While on site the CP reviewed the drilling and data management protocols, density determination methods, geology procedures including diamond drilling and sampling procedures. |
| **Geological interpretation** | • *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*<br><br>• *Nature of the data used and of any assumptions made.*<br><br>• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*<br><br>• *The use of geology in guiding and controlling Mineral Resource estimation.*<br><br>• *The factors affecting continuity both of grade and geology.* | • The geological information is built out of 169 drill holes within the Kaiser Bill deposit.<br><br>• The data used in the geological model is a combination of diamond core and RC drilling, along with mapped surface exposures of the host lithologies and structures.<br><br>• The base of weathering (including partial oxidation) was provided by CSD and used to code the model – a portion of the mineralisation exists inside the oxidized rocks.<br><br>Mineralisation<br><br>• For the Kaiser Bill Deposit, copper represents the primary element for the modelling and estimation process. Element correlation analysis has confirmed that the correlation of silver and gold with copper is adequate to enable estimation inside these primary mineralisation domains. Iron and sulphur display a close correlation with each other enabling the iron mineralisation to be modelled separately with both these elements estimated inside these iron domains. Lead and zinc have been analysed and estimated inside the copper domains, although the grades of these elements are well below economic levels.<br><br>• The interpretation of the copper mineralisation has |

| Criteria | JORC Code explanation | Commentary |
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| | | been undertaken on oblique sections perpendicular to strike, whereby sections are digitised on screen and wireframed to create a 3D solid representing the mineralisation. Analysis of the length weighted grade distribution within the interpreted mineralised indicated no additional copper populations should be defined. Potential exists to define a high grade shoot plunging SW should additional data continue to support the theory. An additional grade domain of 8% iron was also created, copper mineralisation was often contained within the Fe grade shell, Fe is more extensive.<br><br>• The grade shells for both copper and iron have been reviewed by Consolidated Tin to ensure that they are consistent with their geological understanding of the deposit. |
| **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 Kaiser Bill Deposit mineralisation strikes to the NE-SW and extends almost 1 km in this direction, with a vertical extent in excess of 350 m. The across strike extents of the mineralisation across a broad alteration zone from footwall to hangingwall is approximately 120 m.<br><br>• The individual mineralisation lenses generally range in thickness from 5 m to up to 30 m true thickness. Mineralisation dips moderately to the SE and plunges shallowly to the southwest. |
| **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.*<br><br>• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*<br><br>• *The assumptions made regarding recovery of by-products.*<br><br>• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*<br><br>• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* | • Mineral Resource estimation has been completed within Surpac 6.8.1 Resource Modelling software.<br><br>• Ordinary Kriging has been used as the interpolation technique to estimate the Mineral Resource with this method considered appropriate given the nature of mineralisation and mineralisation configuration. All elements were estimated using ordinary kriging.<br><br>• The three dimensional mineralisation wireframes are used to flag the down hole intervals with unique Cu and Fe domain codes. Intervals were checked for inconsistences, split samples, edge dilution and mineralisation outside the interpretation<br><br>• These domain codes have then been used to extract a raw assay file from MS Access for grade population analysis, as well as analysis of the most appropriate composite length to be used for the estimation.<br><br>• Analysis of the raw samples within the Cu and Fe mineralisation domains indicates that the majority of sample lengths are at or below 1 m.<br><br>• Two metre composites were selected as appropriate, CV's were reduced and means relatively unchanged.<br><br>• High grade outliers (Cu, Ag, Au, Fe and S) within the two metre composite data were capped. Domains were individually asses for outliers using histograms, log probability plots and changes in average metal |

| Criteria | JORC Code explanation | Commentary |
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| | • *Any assumptions behind modelling of selective mining units.*<br><br>• *Any assumptions about correlation between variables.*<br><br>• *Description of how the geological interpretation was used to control the resource estimates.*<br><br>• *Discussion of basis for using or not using grade cutting or capping.*<br><br>• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.* | content; grade caps were applied as appropriate Generally the domains defined a well distributed population with low CV's and only minimal grade-capping was required. A top-cut has been applied to the un-mineralised samples to negate the influence of random higher grade samples over-inflating the un-mineralised blocks.<br><br>• Grade continuity analysis within Cu domains that define the mineralisation has been undertaken in Snowden Supervisor software for Cu, Ag and Au. Similarly the Fe domains have been used to undertake continuity analysis for Fe and S.<br><br>• A 3D model with a parent block size of 25 m (X) by 25 m (Y) by 10 m (Z) was created. The drill hole spacing in the deposit ranges from 50 m by 50 m in the better drilled parts of the deposit to 100 m by 100 m in the along strike and down dip extensions of the deposit – therefore the block size selected is considered appropriate for the drill spacing. In order for effective boundary definition, a sub-block size of 3.125 m (X) by 3.125 m (Y) by 1.25 m (Z) has been used with these sub-cells estimated at the parent block scale.<br><br>• No assumption has been made regarding selective mining units. However the sub-blocks are of a suitable selective mining unit size for an open pit operation<br><br>• The interpolations have been constrained within the mineralisation wireframes and undertaken in two passes with the mineralisation wireframes utilised as hard-boundaries during the estimation.<br><br>• The Cu mineralisation domains have been used to constrain the estimation of Cu, Ag and Au with Fe and S estimated inside the Fe mineralisation domains.<br><br>   o The 1st pass utilized a search ellipse set at 80m approximating the distance at which the first variogram structure is defined. The same search parameters are used for each element to minimise order relation issues between blocks. Search orientations are dynamic and local variations re stored in the block model. A minimum of 5 and a maximum of 12 composites have been used during the interpolation with a maximum of three composites from each drill hole.<br><br>   o The 2nd pass used a search ellipse of 160 m with the orientation defined by local undulations stored in the block model. A minimum of 3 and a maximum of 8 composites have been used during the interpolation with a maximum of three composites for each drill-hole.<br><br>• Grade (Cu Fe and S) has been estimated into the un-mineralised blocks using two interpolation passes<br><br>• The resource has been validated visually in section |

| Criteria | JORC Code explanation | Commentary |
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| | | and level plan along with a statistical comparison of the block model grades against the composite grades to ensure that the block model is a realistic representation of the input grades. No issues material to the reported Mineral Resource have been identified in the validation process.<br><br>• No mining has taken place of the Kaiser Bill Deposit, hence no reconciliation data is available for validation. |
| **Moisture** | • *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.* | • Tonnages are estimated on a dry basis. |
| **Cut-off parameters** | • *The basis of the adopted cut-off grade(s) or quality parameters applied.* | • Due to the proximity to surface and size of the mineralisation, a cut-off grade suitable for open pit mining has been used for reporting of the Mineral Resource Estimate. The mineralisation above the 150 m RL has been deemed to be potentially accessible by open cut mining methods and has been reported at a 0.5% Cu cut-off grade,<br><br>• The grades of Cu, Ag and Au have been reported for those blocks satisfying the Cu depth and cut-off grade requirements, with no copper equivalence used.<br><br>• Only the transitional and fresh mineralised material has been included in the Mineral Resource Inventory, as there is uncertainty as to the processing recoveries of the oxidised portion of the mineralisation.<br><br>• The Kaiser Bill Mineral Resource has been reported by cut-off grade and Mineral Resource Category. |
| **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 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.* | • The mineralisation above the 150 mRL has been deemed to be potentially accessible by open cut mining methods.<br><br>• No other mining assumptions have been used in the estimation of the Mineral Resource. |
| **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 Mineral Resource Estimate has been reported for the fresh mineralisation only, as there is no defined processing route for the oxidized material.<br><br>• No other metallurgical factors or assumptions have been incorporated into the Mineral Resource Estimate for Kaiser Bill. |

| Criteria | JORC Code explanation | Commentary |
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| | *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.* | |
| **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 environmental factors or assumptions have been incorporated into the reporting of the Mineral Resource Estimate for Kaiser Bill.<br><br>• Fe and S have been estimated into waste blocks to facilitate waste management plans should reserves be defined. |
| **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.*<br><br>• *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.*<br><br>• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.* | • A total of 3,127 bulk density measurements have been supplied by Consolidated Tin for analysis. All bulk density measurements were collected using procedures based on Archimedes Principal.<br><br>• The relative abundance and composition of the sulphide mineralisation throughout the un-oxidised part the deposit will impact on the bulk density of that material. Analysis has been undertaken to determine a correlation between the bulk density and Fe grade. This produced a correlation coefficient of over 83%. This has been deemed acceptable for deriving a regression between the two.<br><br>• The mean density within the interpreted mineralisation is 3.02 t/m3.<br><br>• Bulk density data are considered appropriate for use in Mineral Resource and Ore Reserve estimation. |
| **Classification** | • *The basis for the classification of the Mineral Resources into varying confidence categories.*<br><br>• *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* | • Classification of the Kaiser Bill Deposit Mineral Resource estimate is in keeping with the "Australasian Code for Reporting of Mineral Resources and Ore Reserves All classifications and terminologies have been adhered to. All guidelines and recommendations have been followed, in keeping with the spirit of the code.<br><br>• The resource classification has been applied to the |

| Criteria | JORC Code explanation | Commentary |
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| | *and metal values, quality, quantity and distribution of the data).* <br><br> • *Whether the result appropriately reflects the Competent Person's view of the deposit.* | MRE based on the drilling data spacing, grade and geological continuity, and data integrity. <br><br>   o Areas of the deposit that do not meet the criteria remain Unclassified. (e.g.: oxidised mineralisation and mineralisation below 150 mRL) <br><br> • The selected parameters described in the report were used as a guide to identify continuous zones of mineralisation meeting the defined requirements for resource classification. Isolated blocks meeting the criteria of a higher resource category are incorporated in the lower resource category. <br><br> • Results reflect the Competent Persons' view of the deposit |
| ***Audits or reviews*** | • *The results of any audits or reviews of Mineral Resource estimates.* | • No other independent audits or reviews have been undertaken on the Mineral Resource estimate. |
| ***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.* <br><br> • *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.* <br><br> • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.* | • The relative accuracy and confidence of the estimate is reflected in the resource classifications applied to the MRE. <br><br> • The ordinary kriging result, due to the inherent smoothing, should only be regarded as a global estimate, and is suitable as a life of mine planning tool. Should local estimates be required for detailed mine scheduling, techniques such as uniform conditioning or conditional simulation should be considered. Additional infill drilling, re-logging and re-interpretation of the geology, and ultimately grade control drilling is required to increase the local scale confidence in the Mineral Resource Estimate |

## SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

Section not applicable to this report.