

ASX Announcement

10 February 2020

TRANSFORMATIONAL ACQUISITION OF CHILLAGOE

Consolidated Tin Mines Limited (ASX:CSD) (**CSD** or the **Company**) is pleased to announce that it has reached agreement to acquire 100% of the shares in Auctus Chillagoe Holdings Pty Ltd (**Auctus**) for purchase consideration of up to A\$53.3 million cash (the **Acquisition**).

Auctus holds 100% of the Chillagoe Base and Precious Metals Project (**Chillagoe Project**), which is located 200 kilometres west of Cairns in Queensland, Australia. Consolidation with CSD's existing mines and processing facilities in the region delivers a well-diversified, high-grade, long-life polymetallic business.

HIGHLIGHTS

- Chillagoe Project comprises a major portfolio of **proven, high-quality assets**:
 - **King Vol Underground Mine**: Currently operating at approx. 360ktpa ore; processed at Mungana to produce zinc, copper and lead concentrates containing silver and gold by-products.
 - **Mungana Processing Plant**: Currently processing King Vol ore; total capacity of 600ktpa; excellent condition (constructed 2017); separate base metal concentrates (plus gold/silver).
 - **Mungana Underground Mine**: Currently on care and maintenance; fresh ore focus delivers clear development optionality including potential mining of the Mungana Deeps deposit.
 - Multiple other advanced resource development opportunities plus large-scale exploration tenure of proven gold and base metals endowment.
- **Highly strategic acquisition** given proximity to CSD's existing polymetallic assets (approx. 140km to Mt Garnet); expecting **substantial operational synergies** (ore sourcing/blending optimisation with twin processing hub flexibility) and **economies of scale**.
- Extensive investment by previous owner delivers a **well-capitalised and heavily de-risked asset base** with a robust focus on safety and environmental stewardship.
- **Immediate, value-accretive growth** in CSD's metal production output and resource inventory.
- **Significant output expansion and life extension potential** from multiple development projects and clear **high-grade exploration upside**; accelerated drilling of high-priority targets planned.
- Combined CSD/Auctus asset base delivers a **significant independent base metals producer** with three operating mines (plus one significant restart opportunity), two processing plants, multiple development opportunities and an expansive regional tenement base with excellent prospectivity.
- Initial consolidation strategy to drive twin-plant optimisation, Mungana Underground Mine re-start, further ore source development and metal output growth, and aggressive exploration of key targets.
- Two-stage purchase consideration; targeted funding via A\$65M secured senior loan note with OCP Asia.
- CSD to undertake name change to 'Aurora Metals Limited' (subject to shareholder approval); Board renewal process underway targeting addition of further technical and resources industry expertise.

The Acquisition remains subject to several conditions precedent including finance and CSD shareholder approval. A Notice of Meeting is expected to be dispatched to shareholders in the next two weeks.

Managing Director, Ralph De Lacey, said the Acquisition was consistent with CSD's strategic objectives:

"We are proud to announce the acquisition of Auctus and the Chillagoe Project, which we believe is transformational for CSD and our shareholders. The transaction establishes CSD as a leading independent base metal producer with a proud Queensland heritage.

The acquisition of the Chillagoe Project is highly aligned with CSD's overarching growth strategy. It delivers us a strategic portfolio of producing and development assets, with outstanding further gold and base metals exploration prospectivity – all in close proximity to our existing operational footprint. We expect to unlock clear economies of scale and substantial synergy benefits, including better matching ore production, grade and blending with milling capacity, from putting these two sets of assets back together.

Critically, we are buying a business that has been heavily invested in by its previous owner. This provides us with a well-capitalised operating base from which to leverage the multiple high-grade production and development opportunities that exist. We know the Chillagoe assets very well already. We also, through our existing operations, have extensive expertise in evaluating, developing, mining and processing similar deposits to Chillagoe. These dynamics all combine to heavily de-risk the opportunity from CSD's perspective.

In short, this transaction delivers us immediate and value-accretive production and resource inventory growth, combined with significant further diversification benefits. It also offers an array of development opportunities and outstanding exploration prospectivity, both of which provide clear potential upside in the form of further production expansion and operating life extension. Finally, consolidation of the two portfolios is expected to unlock substantial synergies, particularly with respect to group processing optimisation and flexibility.

We look forward to delivering for shareholders on the substantial upside opportunities that the Auctus assets offer our existing business."

CSD + Chillagoe: Consolidation and Growth Strategy

The Combined Portfolio

The consolidated CSD/Auctus business is set to possess:

- Three operating mines (Mt Garnet, Dry River South, King Vol Underground Mine) and one significant near-term restart opportunity (Mungana Underground Mine).
- Two processing plants (Mt Garnet and Mungana) with combined polymetallic processing capacity in excess of 1.1 Mtpa (plus a 500ktpa supergene copper circuit).
- A range of advanced development projects with clear potential to grow ore feed sources to the two processing facilities, both of which currently possess excess capacity.
- A consolidated tenement package in a highly endowed and extremely prospective region with numerous walk-up drill targets available.

Key Benefits of the Acquisition

The Chillagoe Project comprises a major portfolio of proven, high-quality, high-grade production (mining and processing) and development assets. It also includes large-scale exploration tenure of proven gold and base metals endowment and high prospectivity, coupled with a successful regional track record of replacing and growing resources.

Auctus and the Chillagoe Project represent a highly strategic acquisition given their proximity to CSD's existing polymetallic assets (approximately 140km to Mt Garnet).

Consolidated ownership is expected to deliver substantial operational synergies (ore sourcing flexibility via multiple mines and recovery optimisation/flexibility with twin processing hubs) and economies of scale (interchangeability with respect to many mill components and consumables, reduced corporate and support overheads per metal product unit, increased purchasing power).

Extensive investment by Auctus across recent years also delivers a well-capitalised and heavily de-risked asset base with a robust focus on safety and environmental stewardship.

The Acquisition is set to deliver immediate, value-accretive growth in CSD's metal production output and resource inventory. It also brings with it significant output expansion and life extension potential from multiple development opportunities and clear high-grade exploration upside.

Short-Term Growth Opportunities and Next Steps

CSD is now targeting the satisfaction of remaining conditions precedent and rapid progress to completion of the Acquisition.

Post completion of the Acquisition, short-term growth opportunities to be pursued within CSD's consolidated portfolio include:

- Driving short-term operational performance at the King Vol Underground Mine and Mungana Processing Plant.
- Accelerated evaluation of the restart potential at the Mungana Underground Mine. This will initially focus on mining remanent sulphide ore from upper levels with well understood metallurgy and metal recovery capability.
- Assessment of the potential for additional Chillagoe deposits (including Girofla, Montevideo, Red Cap) to be developed to supplement ore feed into the Mungana Processing Plant.
- Comprehensive analysis of all exploration data with a view to identification and ranking of high-priority Chillagoe near-mine extensional and regional targets for accelerated drilling.
- Evaluation of the potential for ore feed source optimisation/blending between the Mungana Processing Plant and CSD's existing Mt Garnet Processing Facility (500ktpa polymetallic circuit and 500ktpa supergene copper circuit).
- Evaluation of the potential for expansion of the Mt Garnet polymetallic processing capacity to circa 700ktpa in order to process additional Chillagoe ore sources.
- Extraction of immediate cost reduction synergies with respect to corporate overhead and general support functions.

Acquisition of Auctus

Key Terms

The Acquisition values Auctus at approximately A\$53.3 million on a debt-free, cash-free basis. The Acquisition price comprises an upfront payment of approximately A\$37.3 million, less assumed debt and customary working capital adjustments, and a deferred payment of up to approximately A\$16 million subject to determination of the value of certain potential liabilities (relating to confirmation from the relevant department of environmental assurance amounts, sales provision adjustments and warranty/indemnity claims) within 9 months of completion.

The Acquisition is subject to a number of conditions including:

- **Shareholder approval in accordance with ASX Listing Rule 11.1.2.** The Company will dispatch a Notice of Meeting to shareholders as soon as possible (expected to occur by mid-February). The Notice of Meeting will provide further details regarding Auctus, the Chillagoe Project and the Acquisition. The major shareholders and the Directors holding shares have signed a Statement of Intention to vote in favour of the Resolution (see below).
- **Finance.** CSD currently expects the Acquisition to be funded by way of a A\$65 million senior secured loan note facility, to be provided by certain investment funds managed by Singapore-based investment manager, OCP Asia (Singapore) Pte Ltd (**OCP Asia**). Whilst the key terms and conditions of this facility have been agreed in principle pursuant to a term sheet, funding is conditional upon the approval of OCP Asia's investment committee, completion of due diligence and the execution of formal documentation (amongst other things). Further information on the terms of the facility will be provided in the Notice of Meeting and when the facility has been approved by OCP Asia's investment committee and formal documentation has been agreed.

As an advance payment towards the upfront completion payment, CSD has agreed to pay a deposit of A\$2 million to the Vendor of the Acquisition (Auctus Minerals Nominee Pty Ltd as trustee for Auctus Minerals Australian Unit Trust) on or before 7 February 2020. CSD will utilise an existing financing facility of \$10,000,000 provided by major shareholder Cyan Stone, to fund the deposit. CSD has also agreed a break fee of A\$1 million which is payable in certain circumstances in the event that the Acquisition does not complete.

CSD is targeting completion of the Acquisition as soon as possible following the Company obtaining shareholder approval for the Acquisition, which is expected to occur in March 2020.

A summary of the key terms and conditions of the Share Sale Agreement (including the conditions precedent) is included in Annexure A. Further detail regarding the Share Sale Agreement will be set out in the Notice of Meeting.

Statement of Intention

Each of Cyan Stone Pty Ltd (53.59% shareholding), Snow Peak International Investment Limited (12.23% shareholding), Snow Peak Mining Pty Ltd (an entity controlled by Martin Cai a CSD Director) (6.23% shareholding), Ralph De Lacey (Managing Director and 0.54% shareholder) and Martin Cai (a Director and 0.23% shareholder) (being, major shareholders of the Company) and the Director shareholders, have agreed to vote the shares in the Company held by them in favour of the Acquisition. The major shareholders and Directors who have signed a Statement of Intention to vote in favour of the Acquisition collectively own 72.8% of the shares on issue in the Company.

Auctus and the Chillagoe Project

Overview

Auctus is a private operating entity that purchased the Chillagoe Project in December 2015. Under Auctus' stewardship, the Chillagoe Project has seen the construction of a processing facility at Mungana (**Mungana Processing Plant**), the development of two mines (the **King Vol Underground Mine** and the **Mungana Underground Mine**) and delivery of a maiden Inferred Resource for the Girofla deposit.

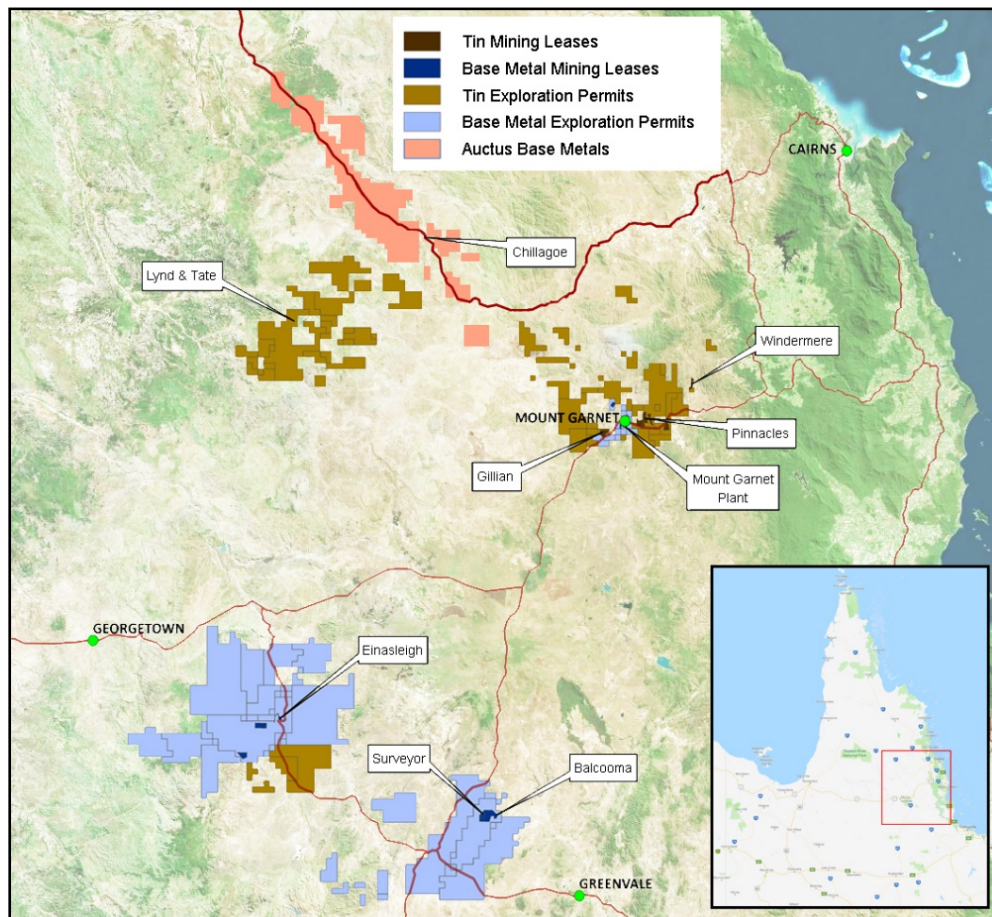
Location

The Chillagoe Project is located 16km from the town of Chillagoe, some 200km west of Cairns and approximately 300km northwest of Townsville. The Chillagoe Project is well serviced by infrastructure,

including Highway 1 and Highway 27 (Burke Development Road connecting the mining region to Cairns), and has access to electricity via the grid. It is also proximate to CSD's major operations, including the Mt Garnet processing facility which is 140km south east of Chillagoe.

The location of both the Auctus assets (Chillagoe Project) and CSD assets is shown in Figure 1 below.

Figure 1: Location of the Auctus assets relative to CSD's operations in North Queensland



History

Mining has been undertaken in the Chillagoe region in north east Queensland for more than 100 years, which has included the mining and extraction of base metals. Early mining included nearby mines, Girofla, Lady Jane, Dorothy, Red Dome Gold Mine and Griffiths Hill, which were operating between the late 1800's and 1990.

In 2006, Kagara Limited (**Kagara**) commenced underground development of the Mungana base metal deposit, developing the mine to a depth of approximately 700m. Mined ore was trucked to Kagara's Mt Garnet processing plant for processing.

In 2012, diminishing commodity prices and a high A\$/US\$ exchange rate saw Kagara enter administration and the base metal rights of the Chillagoe assets sold to Mungana Goldmines Limited, which was subsequently renamed Atherton Resources.

In late 2015, the Chillagoe Project was acquired by Auctus. Development was restarted at the Mungana deposit focussing on oxidised/transitional ore in the upper level of the mine (BMU Block) in conjunction

with construction of a processing facility at Mungana. First ore from the Mungana Underground Mine and first concentrate production from the Mungana Processing Plant was delivered in 2017.

The King Vol Underground Mine was concurrently developed to provide additional ore feed to the Mungana Processing Plant. First ore production from the King Vol Underground Mine also occurred in 2017.

Geology

The Chillagoe Project sits within the Chillagoe Formation which comprises a sequence of limestones, cherts, clastic sediments and mafic volcanics occupying a narrow belt, up to 10 kilometres wide, along the western margin of the Siluro-Devonian Hodgkinson Province.

The Mungana Underground Mine is situated within a structurally disrupted Chillagoe Formation, a short distance northeast of the Palmerville Fault, a steeply-dipping reverse fault which has thrust the Chillagoe Formation over the Lower Proterozoic, high-grade, Dargalong Metamorphics to the southwest.

Historical Kagara ASX Releases indicate that approximately 700kt of zinc, lead and copper ore was produced from the Mungana Underground Mine between October 2008 and April 2012, excluding Auctus' recent production from the BMU block.

Key Assets

An overview of the key assets within the Chillagoe Project is provided in Table 1 below.

Table 1: Overview of key assets

Mungana Processing Plant	Nameplate capacity 600ktpa
King Vol Underground Mine	Operating mine currently in production, with exploration potential to expand current orebody
Mungana Underground Mine	On care and maintenance; remnant mining potential from established underground infrastructure, plus precious metal potential following modifications to the Mungana Processing Plant (and potentially establishing a CIL plant)
Highly prospective exploration tenure	Includes granted Exploration Permits for Minerals that secure most of the highly prospective Chillagoe mineralised belt
Accommodation village	Located on freehold land; 244 airconditioned, ensuite rooms in accommodation village including dry mess facilities, gymnasium and recreation areas
Exploration depot	Located on freehold land; includes office, sample preparation, core storage and all necessary infrastructure
Chillagoe cattle station	208,301 ha leaseholder cattle station (sub leased)
Freehold property in Chillagoe township	Includes Chillagoe Caves Lodge, Mine Manager's house, Heritage building, vacant land

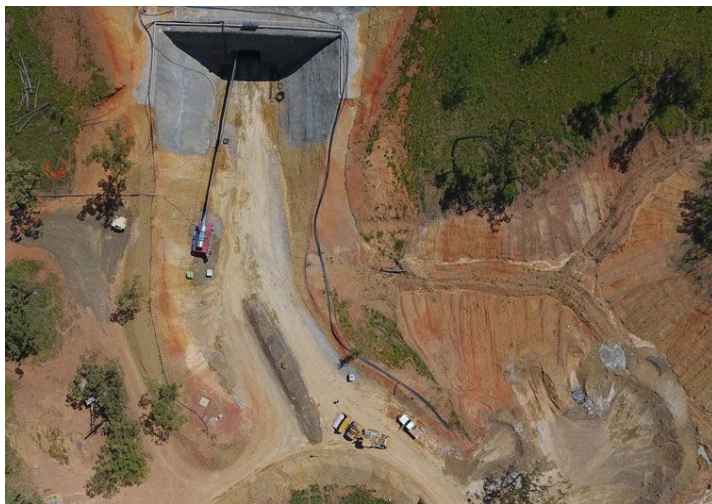
King Vol Underground Mine

The King Vol Underground Mine is an operating underground mine located approximately 25km north west of the Mungana Processing Plant. Construction commenced in March 2016 with first ore generated in August 2017.

King Vol is a zinc-dominant high-grade polymetallic deposit currently being mined at a fairly steady state rate of ore production of approximately 360ktpa. Mined ore is currently trucked approximately 25 km to the Mungana Processing Plant for treatment.

King Vol has an existing historical Mineral Resource estimate that is currently being brought into accordance with JORC 2012 reporting requirements with respect to adjustment for mine depletion. CSD expects to be in a position to disclose this updated King Vol Mineral Resource estimate by July 2020.

Figure 2: King Vol Underground Mine portal



King Vol has significant further exploration prospectivity at depth below current drilling.

Mungana Processing Plant

The Mungana Processing Plant is located adjacent to the Mungana Underground Mine. Construction of the facility was completed in 2017.

The polymetallic flowsheet consists of a single-stage crushing circuit, followed by SAG and ball mill crush/grind, gravity concentration to separate gold and silver in order to produce dore bars, and then sequential flotation circuit tanks and thickeners to produce separate zinc, copper and lead concentrates.

Nameplate capacity is 600ktpa.

Figure 3: Mungana Processing Plant



The Mungana Processing Plant also offers significant strategic value via its potential to unlock stranded third-party resources in the region.

Mungana Underground Mine

The Mungana Underground Mine is located adjacent to the Mungana Processing Plant. It is currently on care and maintenance.

The operation was previously developed and run by Kagara from 2008 until 2010, until closure due to Kagara's broader financial difficulties. Kagara mined the Mungana mineralisation to a depth of 700 vertical metres below surface, with approximately 700kt of ore extracted grading at 1.8% Cu, 1% Pb, 11.1% Zn, 1g/t Au and 80g/t Ag (Atherton Resources ASX release August 2015). This ore was trucked to Mount Garnet and processed through the Mount Garnet processing facility (the Mungana Processing Plant not having been constructed at that time).

Auctus brought the Mungana Underground Mine back into production during 2017. This followed dewatering of upper levels of the underground workings, detailed geotechnical evaluation, installation of primary ventilation and appointment of a mining contractor to run the underground operations. Mined ore was treated through the newly constructed Mungana Processing Plant.

Mining under the Auctus redevelopment focussed on mining the transitional material in the BMU block by underground caving method. Peak monthly mining rates over that period exceeded an annualised rate of 350ktpa ore. However, the BMU block ore was highly oxidised resulting in metal recovery challenges. As a function of this, operations ceased at the Mungana Underground Mine and it was returned to care and maintenance in April 2019.

CSD intends to change direction and focus on remanent mining of sulphide ore from areas within the Mungana deposits that have previously been successfully processed through the Mt Garnet Processing Plant. The BMU block may be revisited at a later date as possible feed for a CIL plant.

Figure 4: Mungana Underground Mine



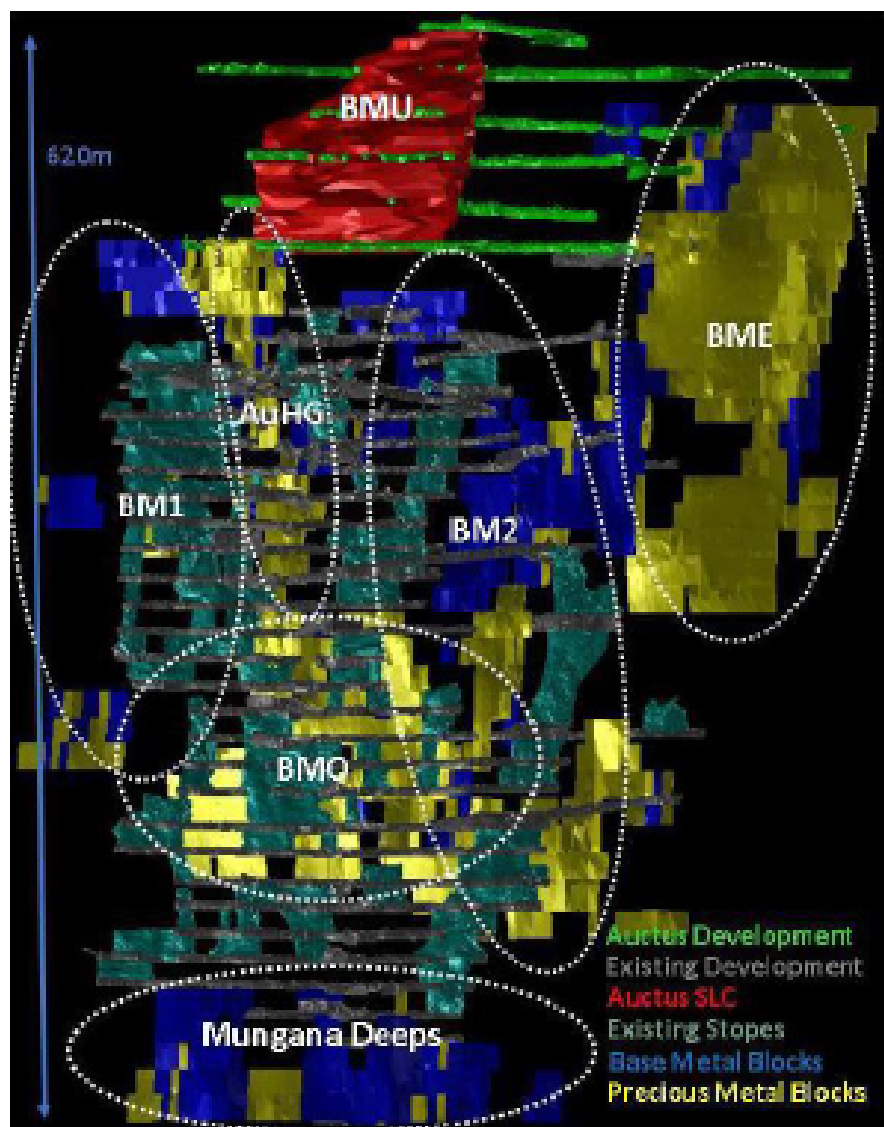
The Mungana Underground Mine contains significant remnant mining potential as well as potential to be mined at greater depth (Mungana Deeps deposit).

During the period that Kagara was operating the Mungana Underground Mine it was subjected to continuing disputes between Kagara and Mungana Goldmines Limited (**MUX**). Kagara was the operator and held the mining rights to the base metals whilst MUX held the mining rights to the gold. Kagara mined

several base metals zones while leaving the gold areas where possible. However, the mine still contains significant remnant mining potential for both base as well as precious metals.

Kagara also drilled below the current workings, confirming potential to continue mining at depth in the area known as Mungana Deeps (see Figure 5 below).

Figure 5: Mungana Mine underground workings



Mungana global Mineral Resource estimate

The Mineral Resource estimate for the Mungana Underground Mine was prepared by Entech Pty Ltd (**Entech**) for Auctus during April 2018. It is reported according to the JORC Code 2012 guidelines.

The JORC Table 1 summarising the Mineral Resource Estimate for the Mungana Underground Mine is attached as Annexure B.

Mineral Resource Statement

This Mineral Resource estimate represents of the global underground Base (Zinc, Lead, Copper) and Precious (Gold, Silver) Metal Resources at the Mungana Polymetallic Deposit¹, based on Reverse Circulation and Diamond Drilling sampling data available as of 6th October 2017. It does not include the BMU ore zone shown in Figure 5¹. The estimate is comprised of Indicated and Inferred material within transitional and fresh rock and is detailed in Table 2 below.

¹ Mungana Polymetallic Deposit MRE compiled by Entech Pty Ltd (2018) refers only to material East of 4000mE and to the West of this below 2050mRL. The area West of 4000mE, above 2050mRL has been completed by H&S Consulting (2016).

Table 2: Mungana Mineral Resource summary at a 3.0% ZnEq cut-off

Classification	Tonnes (Mt)	Zn Grade (%)	Pb Grade (%)	Cu Grade (%)	Ag Grade (ppm)	Au Grade (ppm)	As Grade (%)	Sb Grade (ppm)	Cd Grade (ppm)
Indicated	2.2	3.4%	0.4%	0.8%	48.9	1.4	0.9%	892.7	120.1
Inferred	1.8	3.3%	0.7%	0.6%	42.9	1.7	0.9%	734.2	62.4
Total	4.0	3.3%	0.5%	0.7%	46.2	1.6	0.9%	821.3	94.1

Calculations have been rounded to the nearest 100,000t of ore and 0.1% or 0.1 ppm grade. Tonnages are dry metric tonnes. Minor discrepancies may occur due to rounding.

Zinc Equivalent (ZnEq.) has been calculated using metal pricing, recoveries and other payability assumptions detailed in Annexure B. It is Entech's opinion that all variables comprising the ZnEq calculation have reasonable potential to be extracted, recovered, and sold. The Mineral Resource cut-off grade for reporting was 3.0% ZnEq. This was based upon conceptual economic evaluations in combination with historical extraction, recovery information and Grade Tonnage Curves.

Interpretations were informed by 164 reverse circulation holes (coded as EX and RC), and 277 Diamond holes (coded as UG), for a total of 90,765m of drilling. The Mineral Resource estimate is reported excluding all historical and recent underground mining activity, surveyed up to 31 December 2017. The Mineral Resource estimate is reported inclusive of Ore Reserves. Depth from surface to the current vertical limit of the Mineral Resource is approximately 880m.

No mining dilution or cost factors were applied to the estimate. Mining related assumptions were based on scoping level mining studies and consideration of extraction methodologies and extraction depths utilised historically at Mungana.

No factors or assumptions were made within the Mineral Resource estimate with respect to deleterious variables or by-product. Entech was not aware of deleterious variables at the Mungana deposit which would materially affect eventual economic extraction of Mineral Resources.

No factors or assumptions were made within the Mineral Resource estimate with respect to environment.

Variances to the tonnage, grade, and metal of the Mineral Resources is expected with further definition drilling. The Mineral Resources may also be affected by subsequent assessment of mining, environmental, processing, permitting, taxation, socio-economic and other factors.

¹ Mungana Polymetallic Deposit MRE compiled by Entech Pty Ltd (2018) refers only to material East of 4000mE and to the West of this below 2050mRL. The area West of 4000mE, above 2050mRL has been completed by H&S Consulting (2016).

The Mineral Resource estimate above comprises some Inferred Mineral Resources, which are unable to have economic considerations applied to them nor is there certainty that they will be converted to Measured or Indicated Resources through further sampling.

Drilling Techniques

Between 1986 and 2012, drilling has been completed from surface using NQ, HQ and PQ diamond drilling and reverse circulation percussion drilling techniques.

Underground, fan drilling has been completed using predominantly LTK60 or NQ.

Triple tube drilling methods have been employed in areas requiring improved core recovery/with poor ground conditions.

Oriented core has been collected by Kagara and Mungana Goldmines using the spear technique until 2006 and then the ACE (orientation) tool from 2006 onwards.

Sampling and Sub Sampling Techniques

Sampling at Mungana has been completed by a combination of halved diamond drill core (DD) and reverse circulation (RC) percussion drilling. A nominal grid spacing of 25m x 25m has been used with increased density to 12.5m x 12.5m within the core of the orebody. Sludge drillholes and wall channel/chip samples have been used at various locations throughout the orebody also to assist with mining delineation of base metal mineralisation extents. Sludge drilling and wall samples were excluded from the Mineral Resource process.

Mungana has been sampled using LTK60, NQ, HQ3 and PQ3 sized diamond drill (DD) holes from both surface and underground. Surface samples are predominantly 2m lengths with some 1m samples within mineralised zones.

Underground DD is generally sampled using 1m intervals which are broken at mineralisation contacts. RC samples have been generally collected on 1m lengths in plastic bags from a rig-mounted cyclone. Composite or individual spear or grab samples have then been collected from the bulk bags to produce a 2.5 kg to 3 kg sample for analysis. Spear sampling has been used over dry intervals and grab sampling has been used for wet intervals not suitable for spear sampling.

Mungana have a QAQC protocol in place since 2005 requiring the insertion of commercially available CRM's, blanks and repeat analyses.

Mineralised DD core and some adjacent wall rock is typically half-cored using a diamond saw. Half, or quarter, core has generally been used for analytical work (some whole core has been used). The remnant core is stored in core sheds or onsite for future reference.

Any RC samples are generally collected as 1m down hole intervals, via a rigmounted cyclone splitter into plastic bags. A 2.5-3kg sample is collected for analysis as either a composite or individual sample. Samples are collected by a spear method if the material is dry and as a grab sample if the material is wet (not suitable for a spear sample).

Sample Analysis Method

Historical samples were prepared onsite and sent for analysis at an external commercial laboratory. Recent samples (since 2004) have been sent to an external commercial laboratory for both sample preparation and analysis. Several laboratories in Townsville (TVL) and Cairns (CNS) have been used for analysis during the various drill programs undertaken at Mungana. The most recent laboratory used was ALS in Townsville and SGS in Townsville.

Commercially sourced Certified Reference Materials were inserted at an average rate of 1:20. Sample sizes are considered to be industry-standard and appropriate to represent mineralisation at the Mungana deposit based on: style of mineralisation, thickness and consistency of mineralised intersections, the sampling methodology and the observed assay ranges.

Geology and Geological Interpretation

Base metal mineralisation is principally hosted within a single narrow tabular ore zone associated with skarn development along the boundary of a hanging wall clastic sediment sequence and a footwall limestone. The ore is typically massive although splays and disseminated zones, particularly within the limestone footwall are common. Mineralogically the base metals ore comprises dominantly dark, iron-rich sphalerite, chalcopyrite and galena with lesser amounts of arsenopyrite.

The gold mineralisation occurs mostly in association with a quartz veinlet swarm or stock work which is most evident in the intrusive porphyry but extends laterally into the surrounding clastic sediments and skarn zones. The mineralising episode is clearly focused on the porphyry intrusive which hosts the highest grade mineralisation and most intense degree of veining. Both the grade and quartz veining intensity decrease away from the intrusive. Overall dimensions as currently defined are 400 m strike and 800 m down-dip.

Sectional interpretations of precious and base metal domains and continuity were initially undertaken within Datamine StudioRMTM and Leapfrog3DTM software. Interpretation was a collaborative process with Auctus Mungana Geologists, incorporating existing lithological and structural models to ensure interpretations appropriately represented current understanding of geology and mineralisation controls within the underground environment.

Domain interpretations utilised all available reverse circulation, diamond drill hole data (surface and underground) and excluded sludge and wall chip samples. All interpreted polygons were snapped to drill trace sample intervals prior to construction of 3D lode solids. All drill hole samples and, block model blocks, were coded for lode and oxidation domain.

Mineralisation domains were delineated using a combination of:

- Geological information comprising of Lithology wireframes and Mineralisation Characterisation;
- Nominal lower grade minimum cut-off of 2.0 g/t gold and 1% zinc. This value was based on exploratory data analysis of mineralisation sample population as well as visual review of the mineralisation tenor and strike, and dip continuity;
- Historical underground mining documentation, stope void locations, preferential orientations, and widths.

Weathering and oxidation has had an impact on the down-dip continuity, grade and style of copper, silver and zinc mineralisation in particular with extensive leaching in the zone of oxidation and development of irregular supergene enrichment zones accompanied by typical mineralogical changes for copper and silver in the transition zone. Note this Mineral Resource comprises transitional and fresh material only.

Estimation Methodology

Compositing approaches were selected to honour the mineralisation style, geometry, expected grade variability and potential mining selectivity. Sample data within mineralisation domains was composited using a best fit methodology and application of minimum threshold on inclusions. Residuals were excluded from the MRE.

Exploratory Data Analysis (EDA) of the declustered, composited precious (gold, silver), base metal (zinc, lead, copper) and cadmium, antimony, arsenic, density variables within individual domains was undertaken within Supervisor™ and Isatis™ software. Analysis for sample bias, domain homogeneity (including weathering, lithology), variable correlation, and top capping was undertaken.

Application of top-capping for the estimate was undertaken within individual domains. Top caps were applied where outliers were determined to be statistical and spatial in nature. Top caps were applied to gold and zinc variables with metal reductions less than 5% for zinc and varying from 0.35 – 16.51% for gold.

Variography was undertaken on the capped, declustered variables within mineralisation domains. Robust variogram models were delineated and utilised for Qualitative Kriging Neighbourhood Analysis (QKNA) to determine parent cell estimation size and optimise search neighbourhoods.

Interpolation of gold, silver, zinc, lead, copper, arsenic, cadmium, antimony and density was undertaken utilising Ordinary Kriging (OK) in Geovia Surpac™ within parent cell block dimensions of Y: 2.5 mN, X: 5.0 mE, Z: 2.5 mZ. Blocks were sub celled to Y: 0.625 mN, X: 1.25 mE, Z: 0.625 mZ to provide appropriate volume definition of wireframe geometry. Considerations relating to selection of appropriate block size include: drill hole data spacing, current/historical mining methods and SMU, variogram continuity ranges and search neighbourhood optimisations (QKNA).

Search neighbourhoods broadly reflected the direction of maximum continuity within the plane of mineralisation, ranges, and anisotropy ratios from the variogram models. Neighbourhood parameters were optimised through QKNA and validation of interpolation outcomes.

All interpolations were undertaken within a 3D block model with estimation outcomes optimised and validated. Domain boundaries represented hard boundaries, whereby composite samples within that domain were used to estimate blocks within the domain. Based on outcomes from EDA analysis, no other hard boundaries were applied.

The 3D block model was then coded with depletions (voids and geological cavities), weathering, classification and reporting equivalents prior to evaluation for Mineral Resource reporting. Bulk density

Global and local validation of the gold variable estimated outcomes was undertaken with statistical analysis, swath plots and visual comparison (cross and long section) against input data.

No assumptions were made within the MRE with respect to deleterious variables or by-product.

Classification Criteria

Mineral Resources were classified as Indicated and Inferred to appropriately represent confidence and risk with respect to data quality, drill hole spacing, geological and grade continuity, mineralisation volumes, historical mining activity as well as metal distribution. Additional considerations were the stage of project assessment, amount of diamond drilling, current understanding of mineralisation controls and selectivity within an open pit mining environment.

Only diamond and reverse circulation data was utilised during the estimate. Average sample spacing is variable ranging from 25 to 50 metres.

Indicated Mineral Resources for BM were defined where a moderate level of geological confidence in geometry, continuity and grade was demonstrated, and were identified as areas where:

- Blocks were well supported by drill hole data, with drilling averaging a nominal 20m or less between drill holes.

Inferred Mineral Resources for BM were defined where a low level of geological confidence in geometry, continuity and grade was demonstrated, and were identified as areas where:

- Drill spacing was averaging a nominal 40m or less, or where drilling was within 50m of the block estimate.

Mineralisation within the model which did not satisfy the criteria for Mineral Resource remained unclassified.

The reported Mineral Resource for Mungana underground was constrained at depth by the available drill hole spacing outlined for Inferred classification, nominally 880m below surface. Upper limit constraints on the Mineral Resources were demarcated as 50 to 70m below topographic surface.

Cut-Off Grade

Metallurgical recovery factors have been applied using a Zinc Equivalent (ZnEq) for Mineral Resources and Resource Tabulations of Transitional and Fresh material east of 4000mE, and to the west of this below 2050mRL.

The ZnEq calculation adjusts individual grades for all metals included in the metal equivalent calculation by applying the following modifying factors:

- Metallurgical recoveries,
- Payability factors, inclusive of concentrate treatment charges, refining charges, metal payment terms, net smelter return royalties and logistic costs, and
- Metal prices.

The Zinc Equivalent formula was calculated as presented below:

$$ZnEq = (Zn\% * 0.972) + (Cu\% * 2.039) + (Au \text{ ppm} * 1.323) + (Ag \text{ ppm} * 0.018)$$

Further details on modifying factors applied within the Zinc Equivalent calculations are outlined further in Annexure B.

The Mineral Resource cut-off grade for reporting was 3.0% ZnEq. This was based upon conceptual economic evaluations in combination with historical extraction, recovery information and Grade Tonnage Curves. Tonnages were estimated on a dry basis.

Assessment of Reasonable Prospects for Eventual Economic Extraction

Entech assessed the Mungana underground MRE, as reported, to meet Reasonable Prospects for Eventual Extraction based on the following considerations.

Mining

It was assumed that Mungana could be potentially mined via medium scale mechanised underground mining methods. This assumption was based on conceptual economic evaluations and historical extraction methodologies utilised at Mungana.

The underground Mineral Resource extends up to 880 m below topographic surface. Entech considers material at this depth suitable to have a reasonable prospect of eventual economic extraction within an underground mining framework.

No dilution or cost factors have been applied to the estimate.

Metallurgy

Entech relied upon recent in-house (Auctus) metallurgical studies to assess metallurgical amenability of Mungana Mineral Resources.

Historical processing data and metallurgical test-work indicates the recovery assumptions for various metals and as used within the Zinc Equivalent determinations are reasonable.

Entech understands further test work is planned to confirm expected gold recoveries within the proposed gold scavenging circuit and to identify possible deleterious, contaminant issues.

Metallurgical recovery factors have been applied using a Zinc Equivalent (ZnEq) for Mineral Resources and Resource Tabulations of Transitional and Fresh material east of 4000mE, and to the west of this below 2050mRL.

The ZnEq calculation adjusts individual grades for all metals included in the metal equivalent calculation by applying the following modifying factors:

- Metallurgical recoveries,
- Payability factors, inclusive of concentrate treatment charges, refining charges, metal payment terms, net smelter return royalties and logistic costs), and
- Metal prices.

No metallurgical recovery factors were applied to the Mineral Resources or Resource Tabulations.

The Mineral Resource block model used to estimate the Ore Reserves for Mungana was completed by Entech in April 2018 incorporating all drilling to 6 October 2017 and mining depletions current as of 31 December 2017.

Mungana Ore Reserve estimate

Material Mining Assumptions

The Mungana Underground Mine Ore Reserve is planned to be extracted using mechanised underground longhole stoping techniques incorporating continuous cemented rock fill (**CRF**) for void stability. Areas without top access assume in-situ pillars are left unmined for support. Development is planned to be undertaken using diesel electric jumbo drills for drilling and ground support installation. Diesel underground loaders and trucks are to be used for material movement and diesel-electric longhole rigs for production drilling. These mining methods have been successfully applied at the operation previously.

Geotechnical recommendations for underground mine designs and modifying factors were provided by independent expert geotechnical consultants to a PFS level of detail.

A minimum planned mining width of 1.0 m has been applied to all stopes. A 0.5 m dilution skin was subsequently applied on both the hangingwall and footwall contacts based on geotechnical advice, providing a final minimum void width of 2 m. The grade of this dilution is determined from the contained Resource. An additional 3% of material at waste grade has been applied to model dilution from overbog of fill. The resulting total global unplanned dilution is 23%.

A mining recovery of 95% has been applied to longhole stopes. 5 m sill pillars have been modelled for stopes undercutting fill or historical voids based on geotechnical advice. Ore loss due to pillars is 2% of the total Ore Reserve.

A summary of the key mining parameters of the Ore Reserve is shown in Table 3.

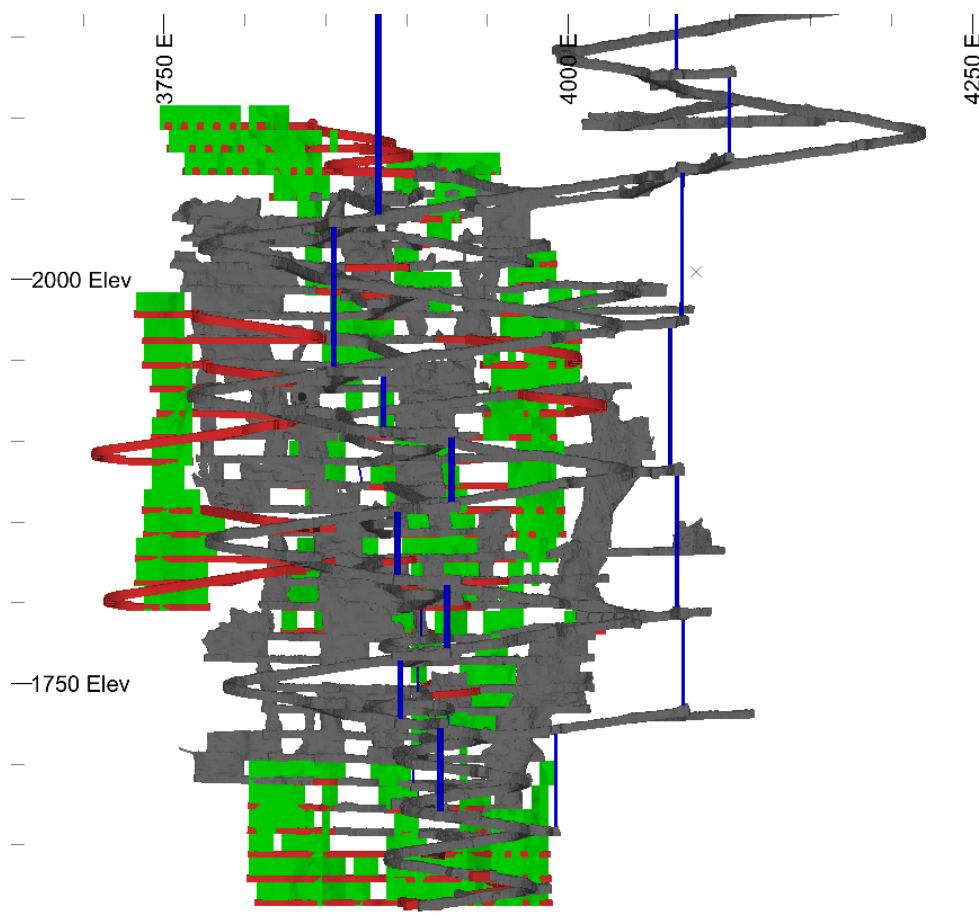
Table 3: Key Mining Parameters

Item	Assumption
Capital Lateral Development	1,700m
Operating Lateral Development	6,000m
Lateral Development Rehabilitation	9,000m
Mining Dilution	1.0m + 3% waste fill
Mining Recovery	95% + 2% loss due to sill pillars

Most of the Ore Reserve sits within existing capital development. This development is currently flooded to ~ 2020 mRL and will require dewatering to access the working areas. Allowance has been made for ground support rehabilitation in the dewatered development. The Ore Reserve mine design is shown in green (stopes) and red (development) in Figure 6 below, with existing voids as grey and blue. The Ore Reserve does not include any BMU material.

Ventilation and secondary egress will be through the existing rise system (coloured blue in Figure 6). Detailed ventilation analysis indicated that the existing installed primary fan system (2 x 90 kW and 2 x 75 kW axial flow fans) will provide sufficient air for the Ore Reserve mine plan (235 m³/s).

Figure 6: Ore Reserve mine design (long-section looking north)



Material Processing Assumptions

Ore is planned to be hauled by underground trucks to the adjacent Mungana Processing Plant for treatment.

The Mungana processing plant will have two separate and mutually exclusive streams, namely a base metals configuration (generating zinc, copper and lead concentrates) and a precious metals (PM) configuration (generating a precious metals copper concentrate). Material was assumed to be batch processed as one or the other based on whichever configuration provided the best NSR, which ultimately depended on the various commodity block grades. Summaries of the recovery and deportment assumptions for the different streams are shown in Table 4 and Table 5. Metallurgical recovery and deportment assumptions were based on historical metallurgical testing.

Table 4: Base Metals Concentrate Stream Metallurgical Assumptions

Metal	Recovery	Deportment to Zn Con	Deportment to Cu Con	Deportment to Pb Con
Zinc	98.4%	95.6%	3.6%	0.8%
Lead	96.2%	3.5%	8.0%	88.6%
Copper	98.1%	11.5%	86.1%	2.4%
Gold	59.6%	0.0%	84.7%	15.3%
Silver	89.9%	23.2%	51.0%	25.9%
Arsenic	21.4%	76.4%	23.6%	0.0%
Cadmium	94.2%	79.5%	20.5%	0.0%
Antimony	84.2%	74.3%	25.7%	0.0%

Table 5: Precious Metals Concentrate Stream Metallurgical Assumptions

Metal	Recovery	Deportment
Zinc	46.6%	100.0%
Lead	26.8%	100.0%
Copper	75.1%	100.0%
Gold	56.3%	100.0%
Silver	65.9%	100.0%
Arsenic	35.1%	100.0%
Cadmium	55.2%	100.0%
Antimony	84.2%	100.0%

The proposed metallurgical process is conventional crushing, grinding and flotation through the operational Mungana processing plant. The processing facility has been commissioned and is performing as planned. The circuit reconfiguration that was commissioned early 2019 to sequentially float polymetallic ores has demonstrated successful flotation of King Vol ores. Whilst there is some variation in flotation performance across the Mungana composites, the circuit is suited to grind, float, dewater and filter the remaining Mungana ore.

Locked cycle flotation tests were conducted on three ore zones. Weighted average grades and recoveries have been applied.

Test work indicates deleterious elements include arsenic, antimony, iron and to some extent cadmium. Penalties for these elements have been estimated based on the offtake agreements, expected grades from the MRE and metallurgical recovery and deportment assumptions from historical data and testwork.

Auctus has offtake agreements in place with IXM S.A. and Transamine Trading S.A. The key terms of the offtake agreements for the concentrates are presented below.

Zn Concentrate	Unit	Value
Zinc		
Payable	units/dmt	85.0%
Minimum deduction	units/dmt	8.0%
Gold		
Deduction	g/dmt	-
Payable balance	%	-
Silver		
Deduction	oz/dmt	3.00
Payable balance	%	70.0%
Copper Concentrate	Unit	Value
Zinc		
Payable minimum	%	96.7%
Minimum deduction	units/dmt	1.0%
Gold		
Payable	%	94.0%
Subject to a minimum deduction of	g/dmt	1.00
Silver		
Payable	%	94.0%
Subject to a minimum deduction of	g/dmt	30.00
Lead Concentrate	Unit	Value
Lead		
Payable	units/dmt	95.0%
Minimum deduction	units/dmt	3.0%
Gold		
Deduction	g/dmt	1.00
Payable balance	%	95.0%
Silver		
Deduction	g/dmt	50.00
Payable balance	%	95.0%

Copper PM Concentrate	Unit	Value
Copper		
Payable minimum	%	95.7%
Minimum deduction	units/dmt	1.0%
Gold		
Deduction	g/dmt	1.00
Payable balance	%	94.0%
Silver		
Minimum deduction	g/dmt	30.00
Payable minimum	%	94.0%

Copper PM Concentrate Treatment Charge	Unit	Value
TCRC	US\$/dmt	84.00

Copper PM Concentrate Refining Charge	Unit	Value
Copper	US\$/lb	0.084
Gold	US\$/oz	5.00
Silver	US\$/oz	1.00

The maximum tonnages agreed under the offtake agreements are:

- (a) Lead: 1,400 DMT +/- 10% at Auctus' option;
- (b) Gold: 500 to 600 DMT at Auctus' option; and
- (c) Zinc concentrate: 80,000 DMT (pa).

Selling costs (road train concentrate to Townsville and ship to customers in Asia) comes to \$162.16/t con.

Cut-off Grades

As the Mungana orebody is polymetallic, with multiple revenue-generating elements, cut-off grades (COG) used for optimisation and design purposes were based on net smelter return (NSR) values.

The Ore Reserve NSR was based on commodity price and exchange rate assumptions as detailed in Table 6 below.

Table 6: Revenue assumptions

Input	Unit	Assumption
Exchange Rate	AUD:USD	0.72
Zinc Price	USD/lb Zn	1.11
Lead Price	USD/lb Pb	0.97
Copper Price	USD/lb Cu	3.10
Gold Price	USD/oz Au	1,312
Silver Price	USD/oz Ag	18.80

The cut-off NSR values were determined based on current mining contractor rates, processing and administration costs, and key offtake terms. The NSR cut-offs used to generate the Ore Reserve mine plan were;

- Fully costed stoping cut-off - \$152/t;
- Incremental stoping cut-off - \$120/t; and
- Development ore cut-off - \$44/t.

Material Modifying Factors

Queensland government royalties have been applied in the revenue calculations to all produced metal. No other royalties have been applied.

An offtake agreement is currently in place for the planned product.

All necessary government approvals have been granted, and mining at Mungana is ongoing at time of reporting.

Based on the information available, and the fact that the site is currently operational, the Competent Person sees no reason any required government approvals or licences would not be granted in a timely fashion to allow extraction of the Mungana Underground Mine Ore Reserves.

Information provided to the Competent Person indicates that all relevant tenements are in good standing and are legally held by the owner.

Study Outcomes

All material was subjected to an economic evaluation. A detailed project financial model determined to a PFS level of accuracy was generated for the evaluation, with most of the mine operating and capital costing sourced from rates provided by the previous mining contractor or capital estimates provided by site operational management. Any remaining mining costs were sourced from relevant similar operations in the Entech database. Processing, marketing and administration costs were determined from current agreements and operational data. All revenue was estimated based on the prevailing offtake agreement. A summary of the Ore Reserve plan costs is provided in Table 7.

Table 7: Cost summary

Costs	\$/ore tonne
Mining Capital Costs	\$22.84
Processing/Site Capital Costs	\$0.42
Total Capital Cost	\$23.26
Mining Operating Costs	\$117.05
Processing, Con Transport & Refining Costs	\$44.78

General & Administration Costs	\$10.40
Royalty Costs	\$10.64
Total Operating Cost	\$182.87
Total Cost	\$206.13

The economic analysis showed that the Ore Reserve plan had a positive NPV assuming an 8% discount rate. Information provided to the Competent Person indicates that the relevant tenements are wholly and legally owned and are in good standing.

The current Ore Reserve estimate (reported to the requirements of JORC Code 2012) for the Mungana Underground Mine (as at 30 November 2018) is:

890kt ore at 3.4% Zn, 0.8% Cu, 0.8% Pb, 1.4 g/t Au and 56 g/t Ag for 30kt contained zinc, 8kt contained copper, 7kt contained lead, 40koz contained gold and 1.6Moz contained silver (refer Table 8 below).

Table 8: Mungana Mine Ore Reserve estimate (November 2018)

Physical	Proved	Probable	Total
Tonnes (t)	-	890,000	890,000
Zn Grade (%)	-	3.4%	3.4%
Zn Metal (t)	-	30,000	30,000
Cu Grade (%)	-	0.8%	0.8%
Cu Metal (t)	-	8,000	8,000
Pb Grade (%)	-	0.8%	0.8%
Pb Metal (t)	-	7,000	7,000
Au Grade (g/t)	-	1.4	1.4
Au Metal (oz)	-	40,000	40,000
Ag Grade (g/t)	-	56	56
Ag Metal (oz)	-	1,600,000	1,600,000

Calculations have been rounded to the nearest 10,000 t of ore, 0.1 %/0.1 g/t Au/1.0 g/t Ag metal grade and 1,000 t/1,000 oz. Au/100,000 oz. Ag metal.

Classification Criteria & Estimation Methodology

The Mineral Resource block model used to estimate the Ore Reserves for the Mungana Underground Mine was generated by Entech in March 2018 as detailed in this announcement.

Indicated Resources have been converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation. No Measured material was included in the Mungana Underground Mineral Resource estimate. Any Inferred material contained within the mine plan has been treated as waste. The Ore Reserves have been defined at delivery to the Mungana processing plant ROM pad.

The Ore Reserve estimate is based on financials and modifying factors determined to a Pre-Feasibility Study (**PFS**) level of detail. Operating processes and costs are well understood from recent operating activities.

Considerations in favour of a high confidence in the Ore Reserve include:

- The mining process is well-known and utilises proven technology and methods widely used in the industry, with sufficient data to generate adequate costing estimates to PFS standard;

- The mining method has been successfully applied at the operation previously and significant historical operating data exists regarding the previous works;
- Ore from the mining areas has previously been successfully treated at the Mt Garnet processing plant;
- Offtake agreements are currently in place; and
- The mine was recently operational.

Considerations in favour of a lower confidence in the Ore Reserve include:

- Future commodity price forecasts carry an inherent level of risk;
- There is a degree of uncertainty associated with geological estimates and the Ore Reserve classifications reflect the levels of geological confidence in the estimates;
- There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study; and
- The Mungana Underground Mine ore has not previously been processed through the Mungana processing plant.

The JORC Table 1 summarising the Ore Reserve estimate for the Mungana Underground Mine is attached as Annexure B.

Development and Exploration Assets

The Chillagoe Project also has a pipeline of advanced development projects including Girofla (located 700m from the Mungana Underground Mine), Montevideo (King Vol Zone), Victoria (Red Cap Zone), Morrison Deeps, and Redcap / Queenslander / Penzance. There is also significant further development potential at Red Dome and Griffith Hill.

Girofla deposit

The Girofla deposit is considered likely to be the next development at the Chillagoe Project due to its size, grade, location and approvals status. It is a fairly recent discovery and illustrates the outstanding exploration potential of the tenement base.

A maiden Inferred Resource has been delineated for the Girofla deposit of 1 Mt at 9.6% Zn, 5.9% Pb, 0.4% Cu and 131g/t Ag, with drilling recently completed (refer to Table 9 below for further detail).

Table 9: Mineral Resource estimate for Girofla

Classification	Type	Tonnes (Mt)	Zn (%)	Pb (%)	Ag (g/t)	Cu (%)
Inferred	Fresh	1.0	9.6	5.9	131	0.4
	Subtotal	1.0	9.6	5.9	131	0.4

The Mineral Resource estimate for Girofla as shown in the table above is reported above a cut-off grade of 5% Zn+Pb. Note that there was no material below 5% Pb+Zn, hence the MRE would have been the same at any cut-off grades between 0% and 5% Pb+Zn.

Girofla was previously mined between 1890 and 1930, producing approximately 220kt at 13.8% Pb, 2.6% Cu and 250g/t Ag. It was one of highest grade lead mines in north Queensland with grades up to 15% Pb and was the largest mine in the Chillagoe district, reaching a depth of 245m. Operations ceased primarily due to increasing zinc levels and the inability of technology at the time to maintain water levels (From Geology and Mineral Resources of the Chillagoe Area, Queensland. Bulletin 70).

The Girofla deposit is less than 1km from the Mungana Underground Mine. This proximity should allow access to the deposit via development from the existing Mungana Underground Mine decline.

Refer to Annexure C for JORC Code Table 1 for the Girofla Mineral Resource estimate.

A summary of all information material to understanding the reported estimates of Mineral Resources at the Girofla deposit is provided below, in accordance with the requirements of ASX Listing Rule 5.8.1.

Geology and Geological Interpretation

The Girofla deposit occurs at the north-western end of a line of volcanic vents in the Mungana Diatreme. The vents, in coral-reef limestone, are filled with breccia. The breccia fragments, generally less than half an inch in dimension, are chert and the matrix, which is blue clay in the workings, becomes silicified to a hard cement at surface. The Girofla vent is almost vertical and circular/pipe like in form.

The nature of the mineralisation varies significantly down dip. Primary ore consists of pyrite, pyrrhotite and marcasite, galena, sphalerite, chalcopyrite, jamesonite and tetrahedrite. Supergene alteration minerals include chalcocite, covellite, copper carbonates, cuprite and native copper.

Following statistical assessment and knowledge of the mineralogy and mineral system, a 2% Pb + Zn and >10% S mineralisation envelope was created to encapsulate the mineralisation to support Mineral Resource estimation.

Sampling and Sub-sampling Techniques

Samples used in the Mineral Resource estimate were obtained through diamond drilling methods and collected from 2017 through 2018.

Core was cut longitudinally using a core saw, with half-core sampled for analysis. When oriented, core was cut in half longitudinally approximately 5 mm to the right of the orientation line. Waste samples both before and after the mineralised intercept were also half-core sampled.

Sample preparation involved drying and crushing the entire sample such that >70% is –6 mm. The sample was then riffle split to reduce size to 2–3 kg and then pulverised in an LM5 bowl pulveriser (targeting >85% passing 75 µm), before scooping out a 250–300 g pulp for analytical determinations.

Drilling Techniques

The full Girofla drill hole database comprises 56 holes for 18,317.99 m. Many holes are historical and do not intersect the Mineral Resource area.

A total of 18 holes for 10,555 m were drilled from 2017 through 2018 to delineate the Girofla Mineral Resource. Only eight of these holes intersect the modelled mineralisation. One hole drilled in 1995 also intersected the modelled mineralisation.

Although some reverse circulation drilling was completed as pre-collars, all intersections through the mineralisation were diamond.

Criteria Used for Classification

Clause 20 of the JORC Code (2012) requires that all reports of Mineral Resources must have reasonable prospects for eventual economic extraction, regardless of the classification of the Mineral Resource. The Competent Person considers that the Mineral Resources reported have reasonable prospects for eventual economic extraction on the following basis:

- The reported Mineral Resource is very high grade and the volume of material could potentially support a multi-year mine life.
- Significant infrastructure exists at the nearby Mungana Mine site. In particular, a processing plant exists that could potentially be used to treat material from Girofla.
- Initial (early stage) metallurgical test work shows potential for high recoveries of Zn, Pb and Ag, based on flotation methods and a grind size of 20 µm. These three commodities are likely to be the projects economic drivers.
- There is significant exploration potential in the immediately vicinity of the modelled area. Accordingly, Mineral Resources are likely to increase with additional drilling, particularly at depth and along strike.
- There are other projects around Girofla that are currently subject to exploration activities. There is potential to blend ore from various sources to optimise recoveries through the Mungana processing plant.

The Mineral Resource has been classified in accordance with guidelines contained in the JORC Code. The following approach was adopted when classifying the Mineral Resources:

- Data quality was assessed.
- The drillhole spacing within the modelled mineralisation envelope was reviewed. The data spacing is irregular. Drillholes are approximately 20 m apart along strike by 25–120 m apart down dip over the area modelled.
- Geological continuity of the mineralisation was assessed. Based on the drill hole information available, the pipe-like mineralisation appears to be continuous down-dip but limited in strike extent. The modelled area covers a dip extent of 500 m and both an along strike and across strike extent of approximately 20–30 m.
- After assessment of the above, the Competent Person considered there is sufficient drilling to imply geological and grade continuity of the mineralisation and therefore support the classification of Inferred Mineral Resources.

The Inferred Mineral Resource category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data are insufficient to allow the geological and grade continuity to be confidently interpreted. Further drilling is required to test geological and grade continuity within the Mineral Resource area to increase confidence

in the Mineral Resource. Due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur.

The classification applied reflects the author's view of the uncertainty that should be assigned to the Mineral Resources reported herein.

Sample Analysis Method

The methodology employed for the main elements of interest are broadly summarised below.

First-pass analyses on all samples comprised a comprehensive 33-element suite by method ME-ICP61, a four-acid digest with ICP-AES finish. Samples with As, Cu, Pb and Zn >10,000 ppm, Cd >1,000 ppm and Ag >100 ppm were routinely re-assayed by method OG62, a four-acid digest method, with a 0.25 g charge and a volumetric ICP-AES finish. Samples with S >10,000 ppm were re-assayed by method S-IR08, sulphur determination by Leco furnace and infrared spectroscopy at the ALS laboratory in Brisbane.

Estimation Methodology

Quantitative kriging neighbourhood analysis was undertaken to assess the effect of changing key kriging neighbourhood parameters on block grade estimates. Kriging efficiency and slope of regression were determined for a range of block sizes, minimum/maximum samples, search dimensions and discretisation grids. The estimation strategy was based on these results.

A three-pass search ellipse strategy was adopted whereby search ellipses were progressively increased if search criteria could not select sufficient data for the block estimate. The primary, secondary and tertiary search ellipse dimensions represent 50%, 100 % and 200% of the variogram range respectively. Ordinary kriging was adopted to interpolate grades into cells.

Statistical analysis was completed using Supervisor software. All geological modelling and grade estimation were completed using Datamine software.

Cut-Off Grades

The Mineral Resource estimate for Girofla has been reported above a cut-off grade of 5% Zn+Pb. In selecting the reporting cut-off grade, the mining method has been considered.

Mining and Metallurgical Methods and Parameters

Girofla is an underground mining proposition, mainly due to the close proximity to the Mungana underground mine and the fact that near-surface mineralisation is mined out.

Metallurgical results are preliminary in nature, however the potential for recovery of sulphide minerals by flotation methods has been demonstrated. Further work is required to better understand the mineralogy and likely metallurgical performance.

Initial metallurgical testwork performed by independent external consultants suggests that the Girofla deposit can produce separate high-quality zinc and lead concentrates.

Victoria and Morrison Deeps deposits

Victoria and Morrison Deeps are located approximately 5km north east of the Mungana Processing Plant. They comprise zinc and copper rich skarn deposits focused along a faulted contact in the Chillagoe formation.

The overall Red Cap area includes three other north west striking mineralisation trends: Queenslander / Morrisons, Tarantula and Belgravia / Penzance.

The various Red Cap deposits remain open in a number of directions, with high-grade drill intercepts including 5m at 31% Zn. Test work is currently underway to assess the ability to upgrade ore from the Red Cap deposits by using ore sorting technology.

The Mineral Resource estimate for Victoria is shown in Table 10 below and is reported above a cut-off grade of 3% ZnEq.

Table 10: Mineral Resource estimate for Victoria

Classification	Type	Tonnes (Mt)	Zn (%)	Cu (%)	Ag (g/t)	Au (g/t)
Indicated	Oxide	0	-	-	-	-
	Transition	0	-	-	-	-
	Fresh	2.4	3.4	0.8	19	0.1
	Subtotal	2.4	3.4	0.8	19	0.1
Inferred	Oxide	0.1	2.3	0.5	24	0.0
	Transition	0.3	2.2	0.6	23	0.3
	Fresh	1.5	2.8	0.8	24	0.3
	Subtotal	1.9	2.7	0.7	24	0.3
TOTAL	Oxide	0.1	2.3	0.5	24	0.0
	Transition	0.3	2.2	0.6	23	0.3
	Fresh	3.9	3.2	0.8	21	0.2
	TOTAL	4.3	3.1	0.8	21	0.2

ZnEq% formula: $[(\text{Au grade} \times \text{Au price} \times \text{Au recov}/31.1) + (\text{Ag grade} \times \text{Ag price} \times \text{Ag recov}/31.1) + (\text{Zn grade} \times \text{Zn price} \times \text{Zn recov}/100) + (\text{Cu grade} \times \text{Cu price} \times \text{Cu recov}/100) / (\text{Zn price} \times \text{Zn recov}/100)]$

- Assumed commodity prices: Zinc \$2,825/t, Cu \$6,925/t, Ag \$17.3/oz, Au \$1,303/oz.
- Commodity price assumptions were provided by Auctus and based on 2019 consensus price forecasts.
- Assumed concentrate recoveries: Zn 96%, Cu 95%, Au 55%, Ag 50%.
- Recoveries are based on limited flotation testwork completed on samples from Victoria; however, supports the assumptions made. Testwork is ongoing.

The Mineral Resource estimate for Morrison Deeps is shown in Table 11 below and is reported above a cut-off grade of 3% ZnEq.

Table 11: Mineral Resource estimate for Morrison Deeps

Classification	Type	Tonnes (Mt)	Zn (%)	Cu (%)	Ag (g/t)	Au (g/t)
Inferred	Fresh	3.5	4.1	0.6	20	0.1
TOTAL	Total	3.5	4.1	0.6	20	0.1

ZnEq. % formula in US\$: $[(\text{Au grade} \times \text{Au price} \times \text{Au recov}/31.1) + (\text{Ag grade} \times \text{Ag price} \times \text{Ag recov}/31.1) + (\text{Zn grade} \times \text{Zn price} \times \text{Zn recov}/100) + (\text{Cu grade} \times \text{Cu price} \times \text{Cu recov}/100) / (\text{Zn price} \times \text{Zn recov}/100)]$

- Assumed commodity prices: Zinc \$2,825/t, Copper \$6,925/t, Lead \$2,290/t; Silver \$17.3/oz, gold \$1,303/oz
- Commodity price assumptions were provided by Auctus and based on 2019 consensus price forecasts.
- Assumed concentrate recoveries: Zn 96%, Cu 95%, Au 55%, Ag 50%
- Recoveries are based on limited flotation test work completed on samples from Victoria. Test work is ongoing.

Refer to Annexure D for JORC Code Table 1 for the Victoria and Morrison Deeps Mineral Resource estimates.

A summary of all information material to understanding the reported estimates of Mineral Resources for Victoria and Morrison Deeps is provided below, in accordance with the requirements of ASX Listing Rule 5.8.1.

Geology and Geological Interpretation

The Victoria mineralisation is developed along the north-eastern flank of a limestone unit at its contact with a siliciclastic package termed the Morrison Conglomerate.

At Victoria, base metal mineralisation with patchy but generally low-grade gold occurs in two discrete skarn lenses developed along contacts between limestone and siltstone. These lenses are referred to as the Victoria Main Zone (VMZ) and the less extensive Victoria South Zone (VSZ).

A skarn mineral assemblage including pyroxene-garnet-magnetite-pyrrhotite is present, along with sphalerite and chalcopyrite. The system is zoned. Within the VMZ, higher grade Zn transitions to higher grade Cu in the northeast. Furthermore, vertically from approximately 250 m below surface, base metal mineralisation gradually transitions to sphalerite-poor gold and chalcopyrite mineralization in the pyroxene-garnet skarn. The base of oxidation is quite shallow (<30 m) at Victoria, deepening to about 50 m near the centre of the deposit.

The limestone unit hosting the Victoria mineralisation varies in thickness from less than 1 m to over 80 m, with an average thickness of approximately 30–40 m in the central deposit area.

The Morrison Deeps mineralisation is developed at a faulted contact between Silurian–Devonian limestone and marble of the Chillagoe Formation and Late Carboniferous dacitic ignimbrites of the Red Cap Volcanics. Skarn is developed along the fault contact. Mineralisation is typically sphalerite-chalcopyrite (\pm minor galena) in garnet-pyroxene-magnetite-pyrrhotite \pm pyrite skarn.

Base metal mineralisation was modelled using a cut-off of 1% Zn+Cu for both Victoria and Morrison Deeps. A total of seven lodes were modelled.

Two oxidation surfaces were also modelled using the weathering logging: a base of complete oxidation (BOCO) and a top of fresh rock (TOFR) surface.

Sampling and Sub-sampling Techniques

Samples used in the Mineral Resource estimates were obtained through reverse circulation and diamond drilling methods. Drilling campaigns were completed from 2005 through 2018. Sampling and sub-sampling techniques are described below.

Kagara Limited (Kagara) (2005 to 2012): Reverse circulation samples were collected via an onboard splitter which delivered samples to large plastic bags over 1 m intervals. Sub-samples were taken from each bag by the spear technique. Composites were taken at 2 m to 4 m (less frequently) intervals for analysis. Damp or wet samples, not suitable for spear sampling, were sampled by taking several small hand grab samples from throughout the bulk sample. Diamond core was cut in half using a core saw. Samples were generally taken at 2 m intervals, or to geological boundaries as dictated by the geologist. Sample preparation involved drying, crushing to 5–6 mm and, if necessary, riffle splitting this material to about 2.5 to 3 kg. The sample was then pulverised in an LM5 bowl pulverizer, such that >85% of the sample was –75 microns, before scooping out a 200 g pulp for analytical determinations.

Auctus Resources Pty Ltd (Auctus) (2017 to 2018): Reverse circulation chip samples were collected at 1 m intervals from a three-stage splitter (7:1) mounted beneath the cyclone. Samples were collected in large green plastic bags for the 7/8 split and smaller calico tie bags for the 1/8 split. Sample intervals were generally marked at a nominal width of 1 m in mineralisation, \pm 0.5 m. Diamond core was cut in half using a core saw. Samples were generally taken at 1 m intervals, or to geological boundaries as dictated by the geologist. Sample preparation involved drying and crushing the entire sample such that >70% is –6 mm.

The sample was then riffle split to reduce size to ca. 2 to 3kg and then pulverised in an LM5 bowl pulverizer (targeting >85% passing 75 µm), before scooping out a 250–300g pulp for analytical determinations.

Drilling Techniques

Kagara drilled 76 holes for 25,538.3 m in three periods from 2005 through 2012. Reverse circulation (generally 5.5" hammer) and diamond drilling (HQ and NQ2) methods were employed.

Auctus drilled 87 holes for a total of 10,474 m from 2017 through 2018. Reverse circulation (generally 5.5" hammer) and diamond drilling (HQ and NQ2) methods were employed.

Criteria Used for Classification

The Competent Person considers that the Mineral Resources reported herein have reasonable prospects for eventual economic extraction on the following basis:

- The cut-off grade adopted for reporting represents the cut-off grade for low-grade ore at the nearby King Vol operation, which is a satellite operation to the Mungana Mine.
- Significant infrastructure exists at the nearby Mungana Mine site, which is wholly owned by Auctus. In particular, a processing plant exists that could potentially be used to treat material from Victoria.
- Initial metallurgical testwork shows potential for high recoveries of Zn and Cu, the two commodities that are likely to be the projects economic drivers.
- There are other projects around Victoria that are currently subject to exploration activities. There is potential to blend ore from various sources to optimise recoveries through the Mungana processing plant.

The Mineral Resource has been classified in accordance with guidelines contained in the JORC Code. The following approach was adopted when classifying the Mineral Resources:

- Data quality was assessed.
- The drillhole spacing was reviewed.
- The block model was then coloured by estimation search pass, minimum distance, number of informing samples, negative weights, average distance, and slope of regression (SOR). The latter were two used for further assessment of classification, as they gave the clearest and most constrained information on the quality of the estimate.
- The sample spacing was then compared to the SOR. SOR values of >0.5 generally correlated with areas drilled out on a 30 m by 30 m pattern or denser.
- Strings were created in the Y-plane and used to flag Indicated Mineral Resource areas in these areas.
- All other blocks within the modelled areas were classified as Inferred.
- For VMZ base metal-dominant minzons 301 and 303, material below –120 m RL was not classified, owing to a lack of sample support and widening of drillhole pierce points beyond 100 m.
- Mineralisation in the transitional and oxide zones were classified as Inferred, primarily owing to the paucity of density data from this material.

Sample Analysis Method

Gold was determined by 25-50-gram fire assay with determination by AAS methods. All work was completed at either SGS's laboratory (Kagara) or ALS Global's laboratory (Auctus) in Townsville.

Base metals (and other elements) analysis was generally by perchloric and four-acid acid digestion with ICP-OES finish.

Estimation Methodology

Quantitative kriging neighbourhood analysis was undertaken to assess the effect of changing key kriging neighbourhood parameters on block grade estimates. The main lode within each deposit grouping was subject to quantitative kriging neighbourhood analysis. Kriging efficiency and slope of regression were determined for a range of block sizes, minimum/maximum samples, search dimensions and discretisation grids. The estimation strategy was based on these results.

A three-pass search ellipse strategy was adopted whereby search ellipses were progressively increased if search criteria could not select sufficient data for the block estimate. The primary and secondary search ellipse dimensions represent 100% and 200 % of the variogram range respectively. The tertiary dimensions represent a range of 800 m for the major direction, with the applicable variogram ratios applied for the semi-major and minor ranges. Ordinary kriging was adopted to interpolate grades into cells.

Statistical analysis was completed using Supervisor and Isatis software. All geological modelling and grade estimation were completed using Surpac software.

Cut-Off Grades

The Mineral Resources reported above a cut-off grade of 3% ZnEq. This grade represents the cut-off grade for low-grade ore at the nearby King Vol Mine.

Mining and Metallurgical methods and Parameters

In selecting the reporting cut-off grade, the mining method has been considered. Victoria is likely to be an underground mining proposition, mainly due to proximity to a creek.

Metallurgical testwork is preliminary in nature. Composite samples from Victoria were subject to flotation testwork in 2017 and 2018 which indicated high recoveries of Cu, Zn, Ag and Au are achievable. Additional testwork is required.

Carbon in Leach plant

Auctus has completed successful feasibility studies on installing a Carbon in Leach (CIL) plant at the Mungana Processing Plant for the recovery of additional gold from tailings of the flotation plant (**CIL Plant**).

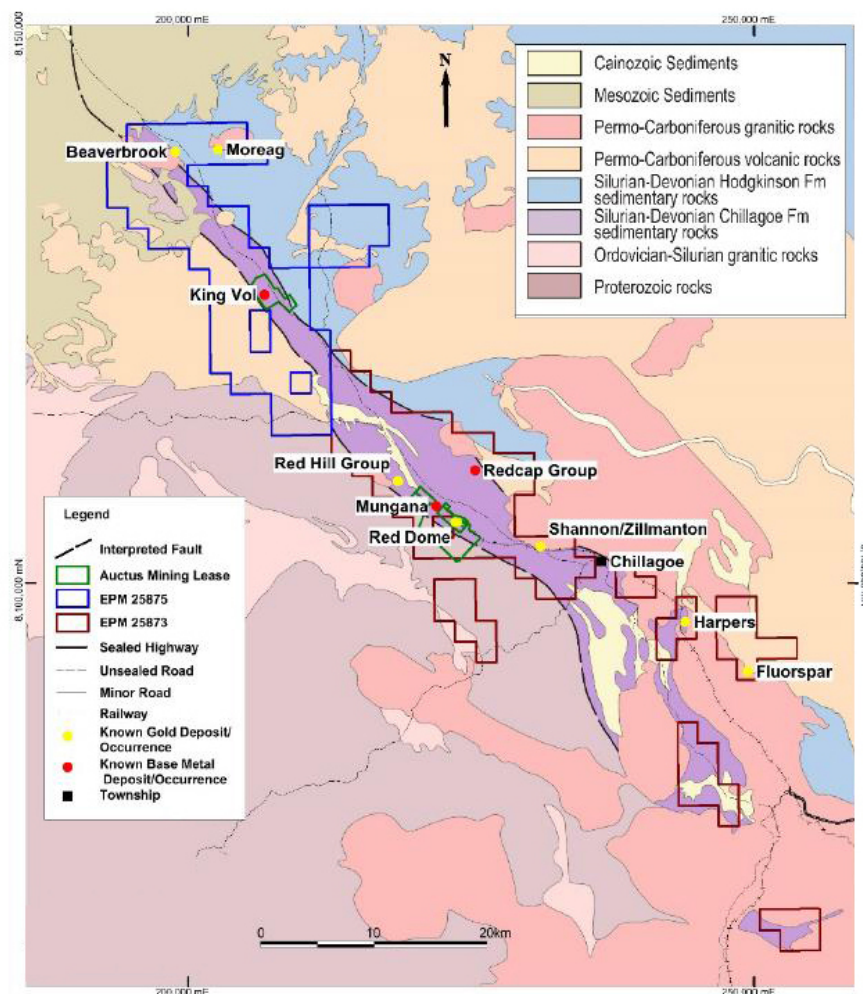
Installation of a CIL Plant would enhance development potential particularly within the deeper Mungana deposits, and at Red Dome and Griffiths Hill, where the higher precious metal grades could be more fully exploited via the CIL Plant addition.

Further exploration

The exploration tenure held within the Chillagoe Project covers some of the most prospective continuous mineralisation in Queensland (see Figure 7). There are over 50 prospects/targets requiring further exploration within a continuous mineralised structure.

The exploration potential within this mineralised belt is substantial. Apart from the known prospects/targets, there is potential for new discoveries throughout this area of high regional mineral endowment with a history of high-grade discoveries. Recent examples are the highly successful Red Dome gold mine, Mungana Underground Mine, King Vol Underground Mine, Girofla deposit, plus a number of existing and developing mining operations held by others operating within this highly mineralised belt.

Figure 7: Chillagoe mineralised corridor



Infrastructure

The town of Chillagoe has a population of approximately 200 with a primary school, police station, hospital, two hotels and normal modern facilities expected in a small Australian country town. The area is famous for underground limestone caves attracting national and international visitors and tourists.

The Auctus Accommodation Village is located adjacent to the town, approximately 400m from the town centre. Chillagoe is located 205km from Cairns by a well maintained, predominantly sealed road.

The Mungana Underground Mine and the Mungana Processing Plant are connected to grid power. The King Vol Underground Mine operates on generator power. The King Vol Underground Mine, Mungana Underground Mine and the Auctus Accommodation Village are connected by good quality gravel roads.

Underground water supply is generally good quality due to the limestone mineralisation in the area.

Workforce

Mining activities at the King Vol Underground Mine are undertaken by a mining contractor. The Mungana Processing Plant is owner-operated. Many of the workforce are from the local area and the Cairns hinterland region.

This ASX release was authorised for and on behalf of the CSD Board by:

Ralph De Lacey, Managing Director

For further information please contact:

Investors

Ralph De Lacey
Managing Director
+61 (0) 7 4032 3319
admin@csdtin.com.au
www.csdtin.com.au

Media

Michael Vaughan
Fivemark Partners
+61 422 602 720
michael.vaughan@fivemark.com.au

Important Notices

Competent Person Statements

The information in this announcement that relates to Mineral Resources at the Mungana Mine including Mungana Deeps is based upon information compiled by Mrs Jillian Irvin BSc., a Competent Person who is a member of the Australian Institute of Geoscientists (MAIG 3035). Mrs Irvin is a Principal Consultant at Entech Pty Ltd was an independent consultant to Auctus Minerals Pty Ltd (Auctus) from October 2017 until April 2018. Mrs Irvin has sufficient experience relevant to the style of mineralisation and deposit type under consideration and to the activities 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”. Mrs Irvin consents to the inclusion in this announcement of matters based on her information in the form and context in which it appears.

The information in this announcement that relates to Ore Reserves at the Mungana Mine including Mungana Deeps has been compiled by Mr Matthew Keenan, a Competent Person, who is currently an Engineer employed by Entech Pty Ltd, who has been engaged by Auctus Minerals Pty Ltd, and who is a Member of the Australasian Institute of Mining and Metallurgy, and is bound by and follows the Institute’s codes and recommended practices. Mr Matthew Keenan is a Competent Person as defined by of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, having 5 years’ experience which is relevant to the style of mineralisation and type of deposit described in this announcement. Mr Matthew Keenan consents to the inclusion in this announcement of the matters based on the information in the form and context in which is appears.

The information in this announcement that relates to the Girofla, Victoria and Morrison Deeps Mineral Resources has been compiled by Mr Aaron Meakin, a Competent Person, who is currently a full time employee of CSA Global Pty Ltd, and who is a Member of the Australasian Institute of Mining and Metallurgy, and is bound by and follows the Institute’s codes and recommended practices. Mr Aaron Meakin is a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, having five years’ experience which is relevant to the style of mineralisation and type of deposit described in this announcement, and to the activity for which he is accepting responsibility. Mr Aaron Meakin consents to the inclusion in this announcement of the matters based on information in the form and context in which it appears.

Forward looking statements

The forward-looking statements in this announcement are based on the Company’s current expectations about future events. However, they are subject to known and unknown risks, uncertainties and assumptions, many of which are outside the control of the Company and the Directors, which could cause actual results, performance or achievements to differ materially from future results, performance or achievements expressed or implied by the forward-looking statements in this Explanatory Statement. Forward looking statements include those containing words such as ‘anticipate’, ‘estimates’, ‘should’, ‘will’, ‘expects’, ‘plans’ or similar expressions.

Background on CSD

CSD is a publicly listed company on the Australian Securities Exchange (ASX:CSD). CSD acquired the ex Kagara ‘Central Region’ assets, including the Mount Garnet Processing Facility, Mount Garnet Underground Mine, Surveyor Mine and the Einasleigh Project from Snow Peak Mining Pty Ltd in 2016. This transitioned CSD from a tin exploration company to a base metal miner and producer, producing approximately 150wmt per day of zinc, lead and copper concentrates with silver and gold co-products.

ANNEXURE A: Summary of Share Sale Agreement for the Acquisition

The key terms of the Share Sale Agreement are as follows:

- (a) **Consideration:** In consideration for the Acquisition, the Company will pay Auctus:
 - (i) **(Deposit):** a deposit of A\$2 million in cash by 7 February 2020;
 - (ii) **(Completion Payment):** approximately A\$35.3 million in cash less Assumed Debt and working capital adjustments at Completion; and
 - (iii) **(Deferred Consideration):** up to approximately A\$16 million in cash subject to certain conditions (relating to confirmation from the relevant department of environmental assurance amounts, sales provision adjustments and warranty/indemnity claims) within 9 months of Completion (together, the **Consideration**).
- (b) **Conditions precedent:** Completion of the Acquisition (**Completion**) is conditional upon satisfaction of the following conditions precedent on or before 31 March 2020:
 - (i) **(Ergon Consent):** Ergon having consented in writing to the change of control of Auctus Resources Pty Ltd (ARPL) that will arise on Completion in accordance with the customer connection agreement between Ergon and Mungana Pty Limited (under external administration) (ACN 101 738 096) (**Mungana**) dated 10 July 2009 (which was subsequently varied and assigned to ARPL by way of a deed of assignment and assumption) (the **Ergon Contract**);
 - (ii) **(Replacement Bank Guarantee):** The Company procuring a replacement bank guarantee for the Ergon Contract (in a form acceptable to Ergon) which is effective from, and subject to Completion, and Ergon having notified the Vendor and Macquarie Bank Limited that the bank guarantee issued by Macquarie Bank Limited in favour of Ergon in respect of the Ergon Contract (**Ergon Bond**) is no longer be required after Completion;
 - (iii) **(Financial Assurance):** The Company procuring replacement financial assurance (in a form acceptable to the applicable department) effective from, and subject to Completion, and the department having notified the Vendor and Macquarie Bank Limited that the environmental bank guarantee provided in respect of the Chillagoe Project is no longer required;
 - (iv) **(Shareholder Approval):** The Company obtaining Shareholder approval for the Acquisition;
 - (v) **(Audited Financial Statements):** Auctus procuring and delivering to the Company, audited financial statements of the Group for the financial year ended 31 December 2018 which are in substantially the same form as the draft financial statements for the same period; and
 - (vi) **(Financing):** The Company procuring financing for the Acquisition on terms satisfactory to the Company (in its sole discretion) (together, the **Conditions**).
- (c) **Transitional Services Agreement:** The Company has agreed to enter into a transitional services agreement with Auctus Minerals Pty Ltd (ACN 602 411 852) (**Auctus Minerals**) (a company that is not part of the Auctus Group and will not be acquired by the Company pursuant to the Share Sale Agreement) pursuant to which Auctus Minerals will provide shared support services for the maintenance and operation of the tenements comprising the Chillagoe Project for a period of up to 6 months from Completion (**Transition Period**) (**Transitional Services Agreement**). At the end of the Transition Period, the support services will be wholly undertaken by the Company. Auctus and the Company have agreed that the Company may, in its sole discretion, make offers of employment to employees of Auctus Minerals who are seconded to the Company under the Transitional Services Agreement and Auctus will permit the Company to make such offers of employment.

Further details regarding the terms and conditions of the Share Sale Agreement will be set out in the Notice of Meeting.

ANNEXURE B: JORC Table 1 – Mungana Underground Mine

Section 1 – Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Sampling at Mungana has been completed by a combination of halved diamond drill core (DD) and reverse circulation (RC) percussion drilling. A nominal grid spacing of 25m x 25m has been used with increased density to 12.5m x 12.5m within the core of the orebody. The spacing closer to the edges of the mineralisation on strike and at depth is seen to increase. Lower quality sludge and wall channel/chip samples have been used at various locations throughout the orebody also. Sludge and wall chip samples were excluded from the estimation. Mungana has been sampled using LTK60, NQ, HQ3 and PQ3 sized diamond drill (DD) holes from both surface and underground. Surface samples are predominantly 2m lengths with some 1m samples within mineralised zones. Underground DD is generally sampled using 1m intervals which are broken at mineralisation contacts. RC samples have been generally collected on 1m lengths in plastic bags from a rig-mounted cyclone. Composite or individual spear or grab samples have then been collected from the bulk bags to produce a 2.5 kg to 3 kg sample for analysis. Spear sampling has been used over dry intervals and grab sampling has been used for wet intervals not suitable for spear sampling. Mungana have a QAQC protocol in place since 2005 requiring the insertion of commercially available CRM's, blanks and repeat analyses.
Drilling techniques	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Drilling has been completed from surface using NQ, HQ and PQ diamond drilling and reverse circulation percussion drilling techniques. Underground, fan drilling has been completed using predominantly LTK60 or NQ. Triple tube drilling methods have been employed in areas requiring improved core recovery/with poor ground conditions. Oriented core has been collected by Kagara and Mungana Goldmines using the spear technique until 2006 and then the ACE (orientation) tool from 2006 onwards.

Drill sample recovery	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> During logging core was reoriented and down hole depths were reviewed, and recoveries recorded. A record of core recovery is stored in the SQL database. Limited RC recovery was recorded however the majority of the RC drilling is not material to the resource estimate being pre-collars for deeper diamond holes. Historically NQ3, HQ3 and PQ3-sized triple-tube techniques have been employed in areas of poor ground conditions to maximise sample recoveries. Often the sampled intervals are between the cavities or zones of core loss, however there are numerous instances where samples extend across cavities and a small sample is attributed to a much larger interval. This can lead to a local bias in the local grade estimation. Entech has created depletion shapes to account for this in the final block model. Recorded recovery for the diamond drilling is 97.9%. As a result of the high recoveries observed within the core there is not expected to be any relationship, or bias, associated with the areas of core loss/poor recovery.
Logging	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> All DD core and RC samples were fully geologically logged for lithology, structure, mineralogy and weathering (oxidation state) Logging is both qualitative and quantitative in nature. A visual percentage estimate for lithology, mineralogy, mineralisation, structure (where possible in core only), weathering and features were routinely recorded with summary comments. The level of detail is considered sufficient to support Mineral Resource estimation, mining and metallurgical studies Drill core was photographed (wet and dry) before sampling, after mark-up. All DD core trays and RC chip trays are stored for future reference either on site or at the coreshed/logging facility in Chillagoe.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Mineralised DD core and some adjacent wall rock is typically half-cored using a diamond saw. Half, or quarter, core has generally been used for analytical work (some whole core has been used). The remnant core is stored in core sheds or onsite for future reference. Any RC samples are generally collected as 1m down hole intervals, via a rig-mounted cyclone splitter into plastic bags. A 2.5-3kg sample is collected for analysis as either a composite or individual sample. Samples are collected by a spear method if the material is dry and as a grab sample if the material is wet (not suitable for a spear sample). Historical samples were prepared onsite and sent for analysis at an external commercial laboratory. Recent samples (since 2004) have been sent to an external commercial laboratory for both sample preparation and analysis. Samples are routinely dried, to a temperature of 120°C, crushed with a jaw crusher to <=6mm. If the sample is more than 3kg it is split and then pulverised in an LM5 to >85% passing 75µm. A 200g split is collected. (SGS PRP88 or ALS CRU-21 and PUL-23). Commercially sourced Certified Reference Materials were

	<p>sampling.</p> <ul style="list-style-type: none"> Whether sample sizes are appropriate to the grain size of the material being sampled. 	<p>inserted at an average rate of 1:20.</p> <ul style="list-style-type: none"> No field duplicates have been collected from DD core and the amount of RC field duplicates is very limited to none. Sample sizes are considered to be industry-standard and appropriate to represent mineralisation at the Mungana deposit based on: style of mineralisation, thickness and consistency of mineralised intersections, the sampling methodology and the observed assay ranges.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Historically various independent laboratories have been used for the analytical works, mostly Tetchem/Analabs and occasionally Amdel/CClassic Comlabs in Cairns and Townsville respectively. Some low priority batches have been analysed on-site at the Red Dome Mine laboratory. A perchloric digest with AAS finish was typically undertaken for base metal analysis with 50gm fire assay with AAS finish being the principal method for Au analysis. Trace elements were generally analysed by XRF methods. Over-range base metals were generally re-assayed via multi-acid digests and AAS finish. For the Kagara drilling programs between 2004 and 2009 samples were mostly submitted to the SGS Laboratory (formerly Analabs) in Townsville. Digests prior to 2005 were generally by perchloric acid, switching to a 3-acid digest after that date. A 0.3gm sample was digested using hydrochloric, nitric and perchloric acid (SGS: ICP21R method). The solution is diluted and presented to an ICPOES for analysis. Over upper detection limit samples are re-digested with an ore grade 3 acid digest (SGS: DIG23Q method) and analysed with an ICPOES (SGS: ICP23Q method). Gold analysis was undertaken by 30gm or 50gm fire assay in which the sample is fused at 1060°C, the resultant product then being digested in Aqua Regia and the solution analysed by AAS (SGS: FAA303 or FAA505 method). From 2009 until 2011 samples were predominantly submitted to ALS Laboratory in Townsville for base metal analysis by 2 acid aqua regia digest and ICP AES (ALS: ME-ICP41). During this time the standard suite of elements analysed was: Cu, Pb, Zn, Ag, Cd, Sb and Bi; other elements were analysed on an ad hoc basis. Gold analysis was by 30gm or 50gm fire assay with AAS finish (ALS: Au-AA25 or AU-AA26). Over range base metal samples were generally re-assayed by a two-acid aqua regia digest with ICPAES finish (ALS: OG46) Most recently (2011, Mungana Goldmines Ltd) samples were submitted to SGS Laboratories in Townsville for base metal analysis by 3-acid digest and ICP OES and Au analysis by 50gm fire assay with AAS finish (SGS: ICP21R, DIG23Q, ICP23Q, FAA303 or FAA505). Analyses have predominantly been completed at independent commercial analytical laboratories with relevant in-house calibration and duplicate analysis practices. The methods are considered appropriate and suitable for the evaluation of mineralised intercepts and incorporation in resource estimate work. The analytical methods may be considered to be total digests. Magnetic Susceptibility was measured post-2004 using a hand-held KT-10 magnetic susceptibility meter. Insertion of Standards, blanks and laboratory check analyses

		<p>have been completed as a part of the QAQC procedures at Mungana. CRM insertion between 2004 and 2007 was inconsistent and routinely inserted for base metals from 2007. Both base metals and gold standards have been used at a rate of 1:20 from 2011.</p> <ul style="list-style-type: none"> The QAQC data that is available for the post 2005 drilling is reasonable and no serious bias or errors have been identified. The assay methods for the recent data reflect current industry practice results from the QAQC protocols are acceptable for Mineral Resource estimation. Field duplicates and umpire analyses should be included in any future drill program to obtain a better understanding of the precision of the data and how variable or nuggetty the deposit is.
Verification of sampling and assaying	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Significant intersections and sampling was regularly monitored/inspected by Senior Geological staff. Entech and previous independent geologists have completed site visits and inspected mineralised intersections from the Mungana deposit prior to signing off on Mineral Resource estimates. Very limited twin hole drilling has been completed and the analysis of these is inconclusive. Mungana deposit is however very densely drilled (at least 15m centres) and continuity of mineralisation within the main lode is very well defined for Base Metals mineralization. Sampling and logging data is recorded onto paper and transferred to excel manually and then uploaded into the SQL database. Entech reviewed 5% of the assays records for transcription errors and found the data to be acceptable. No assay data has been adjusted for this estimate. Sb data failing QAQC checks has been completely excluded from the estimation process.
Location of data points	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Drill hole collar location have been recorded using Differential GPS pre-2003 by mine surveyors and post-2003 by contract surveyors or by Mungana mine staff. Numerous check surveys of collar locations have been completed previously. Holes have been routinely surveyed down hole using single or multi-shot devices at approximately 30m intervals. Historic Elders Resources RC holes do not have any down hole surveys. A fixed calibration station was utilized to sporadically calibrate down hole survey cameras. MGA_GDA94, Zone 55 is the grid system covering the region however a local mine grid system is established for the site. A Digital Terrain Model (DTM) of the area was completed by AAMHatch in December 2005 using aerial photography to an accuracy of +/- 0.1m.
Data spacing and distribution	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> DD and RC drilling across Mungana is at a nominal spacing of 25m x 25m with significant areas covered to 12.5m x 12.5m. Entech considers the data spacing to be sufficient to demonstrate the continuity of both the geology and the mineralisation. Spacing is sufficient to define a Mineral Resource for the Mungana deposit. For Mineral Resource estimation purposes, a 1m (base and

	<p>Reserve estimation procedure(s) and classifications applied.</p> <ul style="list-style-type: none"> Whether sample compositing has been applied. 	<p>other metals) and 2m (gold) down hole composite was utilized.</p>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Drill holes are predominantly oriented mine-grid north. Intersection angles of the drilling and the Mungana mineralisation ranged from perpendicular to oblique with rare occurrences of low angles to the mineralisation dip due to fan drill angles and near vertical deep drill holes from surface. The orientation of mineralisation was delineated by the correlation of historical underground mining, site-based observations and established continuity of along strike mineralisation in assay data. Entech was of the opinion the predominant drilling orientation is suitable for mineralisation volume delineation at the Mungana deposit, does not introduce bias nor pose a material risk to the MRE.
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> Individual samples were stored in pulp packets (pre-2004) or calico bags which were placed into sealed poly-weave bags at the Chillagoe core processing facility or Red Dome core yard. They were delivered to SGS laboratories or ALS laboratories in Cairns or Townsville by various local transport companies.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> Sampling techniques utilised over the years are consistent with industry standards prevailing at the time. Only piecemeal external audits or reviews of sampling techniques have been carried out.

Section 2 – Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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. The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area. 	<ul style="list-style-type: none"> The Mungana project is 100% owned by Auctus Resources Pty Ltd. The project is located within granted Mining Lease 5319. Several adjacent tenements are utilized for treatment and tailings storage etc. (Mining Leases 4928, 4977 and 5176). All tenements are in good standing.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Auctus Resources Pty Ltd secured 100% ownership of Mining Lease 5319 and the other mining leases through the take-over of Atherton Resources Ltd in December 2015. Atherton Resources Ltd had previously changed its name from Mungana Goldmines Ltd in August 2015. Mungana Goldmines originally acquired an interest in the gold rights of the Chillagoe tenement areas from Kagara Limited when it was

		<p><i>floated as a separate company on the ASX in 2010.</i></p> <ul style="list-style-type: none"> • <i>Kagara had previously purchased the Red Dome project tenement package in 2003 from Niugini Mining Limited who had been exploring the region since 1992. Prior to Niugini Mining, Elders Resources Ltd had held the tenement area since the mid-1980s. Prior to this, Arkaroola Resources Ltd had held an option to acquire the property.</i> • <i>During Elders Resources period of tenure, a total of 18 diamond drill holes and 78 reverse circulation drill holes were completed on the Mungana property. Niugini Mining completed a further 160 holes, mostly diamond drill holes into the prospect. Subsequently Arkaroola Resources completed a further 6 drill holes, 45 diamond and one reverse circulation. Kagara subsequently drilled a further 86 drill holes (parent and daughter holes) into the property, mostly by diamond drilling with reverse circulation pre-collars to evaluate the base metal and gold resources.</i> • <i>Mining operations commenced during 2006 with ore production between October 2008 and April 2012 with 725,000 tonnes of base metal ore being produced. Extensive diamond drilling operations were carried out underground during this period, comprising 423 cored holes, many on behalf of Mungana Goldmines. Additionally, for Mungana Goldmines, six metallurgical sampling drill holes (reverse circulation) and eight geotechnical and sterilisation diamond drill holes, were drilled from surface in the area of the proposed open pit. Mungana Gold Mines finally drilled a further 6 metallurgical cored holes in 2011.</i>
Geology	<ul style="list-style-type: none"> • <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> • <i>Base metal mineralisation is principally hosted within a single narrow tabular ore zone associated with skarn development along the boundary of a hanging wall clastic sediment sequence and a footwall limestone. Overall dimensions as currently defined are 400 m strike and 800 m down-dip. The ore is typically massive although splays and disseminated zones, particularly within the limestone footwall are common. Massive ore may reach grades more than 30% Zn with several percent Cu and Pb.</i> • <i>Mineralogically the base metals ore comprises dominantly dark, iron-rich sphalerite, chalcopyrite and galena with lesser amounts of arsenopyrite.</i> • <i>The gold mineralisation occurs mostly in association with a quartz veinlet swarm or stock work which is most evident in the intrusive porphyry but extends laterally into the surrounding clastic sediments and skarn zones. The mineralising episode is clearly focused on the porphyry intrusive which hosts the highest-grade mineralisation and most intense degree of veining. Both the grade and quartz veining intensity decrease away from the intrusive.</i>

Owner	Year	Hole Series	No of Holes	Meterage	Drill type	Purpose
Elders Resources	1986-1991	NQ001 – 016, NR001 – 078	95	11,216.80	RC/DD	Exploration
Niugini Mining	1992-1996	453 – 746	161	30,071.17	RC/DD	Exploration
Arkaroola Resources	2000	816-826	6	1,486.40	RC/DD	Exploration
Kagara Exploration	2003-2006	827 – 923W1	86	46,302.37	RC/DD	Exploration
Mungana Operations	2008-2011	MUD001 – 563	423	62,961.80	DD	UG Exploration
Mungana Operations	2009	MOC001 – 014	14	2,320.95	RC/DD	Exploration
Mungana Operations	2006-2011	920 – 940, MTD1 – 2, TDAGE series	62	3,216.10	RC/DD	Geotechnical
Mungana Gold Mines	2011	1092 – 1098	6	1,010.10	RC/DD	Met Sample
Total			853	158,585.69		

<p><i>Data aggregation methods</i></p>	<ul style="list-style-type: none"> <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades)</i> <i>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.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> <i>This table has been prepared to support the public release of a Mineral Resource estimate. In this announcement, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades were not used and Exploration Results have not been reported.</i> <i>This table has been prepared to support the public release of a Mineral Resource estimate. In this announcement, aggregate intercepts were not used and Exploration Results have not been reported.</i> <i>Metal equivalent values have not been used with regard to Exploration Result reporting. In order to account for the polymetallic nature of the deposit when reporting the Mineral Resource, a metal equivalent formula was calculated so that the contribution from each metal was considered when reporting the Mineral Resource.</i> <i>The formula below was used to calculate the zinc equivalent: $ZnEq = (Zn\% * 0.972) + (Cu\% * 2.039) + (Au \text{ ppm} * 1.323) + (Ag \text{ ppm} * 0.018)$.</i> <i>Metallurgical Recoveries and Metal Prices, assuming FX Rate AUD\$0.76:USD\$1</i> <table border="1" data-bbox="770 925 1434 1106"> <thead> <tr> <th>Metal</th><th>Recovery (%)</th><th>Pricing (AUD\$)</th></tr> </thead> <tbody> <tr> <td>Zinc</td><td>97.2</td><td>3,742/t</td></tr> <tr> <td>Copper</td><td>97.8</td><td>7,803/t</td></tr> <tr> <td>Gold</td><td>93.1</td><td>53.18/g</td></tr> <tr> <td>Silver</td><td>92.4</td><td>0.74/g</td></tr> </tbody> </table> <p><i>Payable Metal Factors are presented below:</i></p> <ul style="list-style-type: none"> <i>Zinc. Zinc concentrate treatment charges, zinc metal payment terms (in zinc concentrate), logistic costs and net smelter return royalties.</i> <i>Copper. Copper concentrate treatment charges, copper metal refining charges.</i> <i>Gold. Gold metal payment terms (in copper and lead concentrates), gold refining charges and net smelter return royalties.</i> <i>Silver. Silver metal payment terms (in copper, lead and zinc concentrates, silver refining charges and net smelter return royalties.</i> 	Metal	Recovery (%)	Pricing (AUD\$)	Zinc	97.2	3,742/t	Copper	97.8	7,803/t	Gold	93.1	53.18/g	Silver	92.4	0.74/g
Metal	Recovery (%)	Pricing (AUD\$)															
Zinc	97.2	3,742/t															
Copper	97.8	7,803/t															
Gold	93.1	53.18/g															
Silver	92.4	0.74/g															
<p><i>Relationship between mineralisation widths and intercept lengths</i></p>	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>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').</i> 	<ul style="list-style-type: none"> <i>The data spacing is irregular, but overall averages 25 m spacings (along strike and down dip) over the area modelled.</i> <i>Holes have been drilled at various dips and azimuths and therefore intersect the lodes at variable angles. Underground drillholes were generally drilled orthogonal to zinc, lead mineralisation. Some surface drillholes are oblique to the trend of the mineralisation, however the bulk of MRE relies upon underground drilling.</i> <i>In preparing the mineralisation models which define the limits to the Mineral Resource reported herein, the true widths of the mineralisation are honored.</i> <i>Drill hole intercept lengths are not reported in this announcement.</i> 															

<i>Diagrams</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Relevant maps and sections are included as part of the Mineral Resource Technical Report.
<i>Balanced reporting</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Exploration Results (drill hole intersections) have informed the Mineral Resource estimate. Summary details relating to this drilling is provided under "Drillhole Information". The Competent Person visited site from 20th to 22nd February 2018 and inspected significant intersections from several holes.
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No substantive exploration data exists that has not been mentioned elsewhere in this table.
<i>Further work</i>	<ul style="list-style-type: none"> The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>	Entech is not aware of any future exploration plans and any future plans are not material to the Mineral Resource estimate or Technical Report.

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
<i>Database integrity</i>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Entech completed a comparison of 5% of the original laboratory assay certificates against the data within the Auctus Mungana Database. Transcription errors were identified and discussed with Auctus geologists. DataShed, Surpac and Datamine all have in-built drill hole validation tools and Entech completed various validation checks such as overlapping samples, duplicate entries, missing data, sample length > hole length, unusual assay

		values and a review of below detection limit samples. A visual examination of the data was also completed to check for erroneous down hole surveys.
Site visits	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Entech undertook a site visit to the Mungana deposit on 20th to 22nd Feb 2018. Primary focus for the site visit was to observe, review, and document drilling and sampling including: <ul style="list-style-type: none"> • QAQC, practices; • geological, collar, survey and assay data collection; • data storage; • data verification processes; • drill hole core and underground mapping comparison against current understanding of mineralisation controls and existing approach to mineralisation interpretation. • Outcomes from the site visit were utilised to aid interpretation of mineralisation domains of the Mungana Base Metal Lodes, and to assess any risk to the Mineral Resources from historical mining and milling experience. • The site visit confirmed that drill hole data collection and verification procedures, with respect to historical and recent drilling programs, was appropriately managed to maintained data integrity and minimise data errors. • Mr Ian Hodkinson is the Chief Mine Geologist for the Mungana Operations. • Ms Jillian Irvin, Geology Consultant at Entech Pty Ltd and independent consultant, is the Competent Person for the estimation and classification of global underground polymetallic Mineral Resources at Mungana.
Geological interpretation	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Lithology and structure are considered the predominant controls on both the Base Metals and Gold mineralisation at the Mungana deposit. • Entech relied on database derived geological and assay data, input from Mungana geologists familiar with the deposit geology, historical mineralisation wireframes and mining voids to evaluate geological, structural and mineralisation continuity. • Entech reviewed and remodelled historic lithological units supplied by Auctus for Mineral Resource estimation for perceived inconsistencies in logging. • Entech utilised oxidation surfaces supplied by Auctus geologists. A brief review found them to be appropriate for Mineral Resource estimation. • Confidence in the mineralisation continuity was assessed and cross-referenced against available data sources and in discussions with Auctus geologists throughout the interpretation process. Assumptions with respect to mineralisation continuity (strike and dip) and shoot orientation within the underground Mineral Resource were drawn directly from; <ul style="list-style-type: none"> • Drill hole lithological logging, • Close spaced resource definition drilling, nominally 25 m x 25 m down to 12.5 m by 12.5 m in the central portion of the deposit, • Mineralisation characterisation, based upon lithology,

		<ul style="list-style-type: none"> • <i>Underground cross-cut mapping, and</i> • <i>Historical underground mining documentation/records/files.</i> <p><u>Gold Mineralisation</u></p> <p><i>Entech considers confidence is:</i></p> <ul style="list-style-type: none"> • <i>Moderate in the geological interpretation and continuity of the porphyry, breccia and skarn hosted mineralisation;</i> • <i>Low in the geological interpretation and continuity of the BME mineralisation domain.</i> <p><i>Entech believes that alternate interpretations and additional drillhole information:</i></p> <ul style="list-style-type: none"> • <i>Is unlikely to result in significant difference to porphyry and skarn lodes spatially and/or volumetrically;</i> • <i>May result in significant difference to the Breccia domains volumetrically;</i> • <i>May result in significant difference to BME domain both spatially and volumetrically.</i> <p><i>Interpretations of gold domain continuity were initially undertaken using all available drill holes within Geovia Surpac™ software. Intercepts correlating to Gold mineralisation and underpinned by strike continuity implied from lithology wireframes were independently identified and manually selected within Geovia Surpac™ prior to creation of a vein model within Leapfrog3DTM implicit modelling software. Interpretation was a collaborative process with Auctus Geologists to ensure modelling appropriately represented observations and current understanding of geology and mineralisation controls. Guided by mineralisation characterisation a total of fourteen mineralisation volume domains were delineated using a combination of:</i></p> <ul style="list-style-type: none"> • <i>Geological information comprising of Lithology wireframes and Mineralisation Characterisation;</i> • <i>Nominal lower grade minimum cut-off of 2.0 g/t gold. This number was based on exploratory data analysis of mineralisation sample population as well as visual review of the mineralisation tenor and strike, and dip continuity;</i> • <i>Instances where the intercept gold value fell below the nominal cut-off, however was supported by geological indicators of domain continuity, the intercept was included to maintain domain consistency given the style and commodity of this deposit;</i> • <i>Historical underground mining documentation, stope void locations, preferential orientations, and widths.</i> <p><u>Base Metal Mineralisation</u></p> <p><i>Entech considers confidence is moderate to high in the geological interpretation and continuity of the mineralised lodes. Entech believes that any alternate interpretations would be unlikely to result in significant difference to lodes spatially and/or volumetrically.</i></p> <ul style="list-style-type: none"> • <i>Statistics and cumulative distributions were reviewed for the base metals elements (Zn, Pb, Ag and Cu) to look for natural populations for use in lode modelling. A weak natural break was observed at Zn>=1.0% which was the primary grade boundary for base metal lode delineation. The statistical review highlighted that the 1.0% Zn cut-off would capture,</i>
--	--	--

		<p>and model, the majority of the other elements of interest (Pb, Ag and Cu). Where there were Pb, Ag and Cu samples outside the defined 1.0% Zn boundary which exceeded 0.5% Pb, 1.0% Cu and/or 100ppm Ag the interpretation was adjusted to capture these samples if it made geological and economic sense to do so.</p> <ul style="list-style-type: none"> Base metal mineralisation domains were delineated using a combination of: <ul style="list-style-type: none"> Nominal lower grade threshold of 1% Zn. As discussed this was based on exploratory data analysis of mineralisation sample populations as well as visual review of the mineralisation tenor and strike, and dip continuity. Where this threshold did not contain the other elements (Pb, Cu and Ag) of interest the interpretation was extended/adjusted to include these intervals. Sb, As and Cd were estimated using the base metal lodes. Some material below 1% Zn has been included into the lodes to maintain continuity. Historical underground mining documentation, mapping, stope void locations, preferential orientations, and widths. Weathering and oxidation has had an impact on the down-dip continuity, grade and style of copper, silver and zinc mineralisation in particular with extensive leaching in the zone of oxidation and development of irregular supergene enrichment zones accompanied by typical mineralogical changes for copper and silver in the transition zone.
Dimensions	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The mineralisation strike extent of the Mungana deposit is approximately 500m, with a down-dip extent of approximately 880m. Across strike widths vary from 1m to 15 metres. The MRE upon which this Table 1 is based comprised the following extents: <ul style="list-style-type: none"> Zinc, Lead, Copper, Silver Mineral Resource Estimation. <ul style="list-style-type: none"> West of 4000mE – below 2050mRL; East of 4000mE – all material (above and below 2050mRL). It should be noted that two MRE reporting approaches were utilised for tabulation of the above estimations into Polymetallic (Zinc Equivalent) and Gold (ppm) Mineral Resources.
Estimation and modelling techniques	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Sectional interpretations of base metal lode domain continuity were initially undertaken within Datamine StudioRMTM software. Interpretations of gold domains were undertaken within SurpacTM and Leapfrog3DTM. Interpretation was a collaborative process with Auctus Mungana Geologists to ensure modelling appropriately represented observations and current understanding of geology and mineralisation controls. Domain interpretations utilised all available drill hole data. However, excluded sludge and wall chip samples. All interpreted polygons were snapped to sample intervals prior to construction of 3D lode solids. All drill hole samples and, block model blocks, were coded

	<p>used.</p> <ul style="list-style-type: none"> • 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. 	<p>for lode and oxidation domain.</p> <ul style="list-style-type: none"> • Drill hole data was reviewed for statistical outliers and top-cuts were applied by domain and variable. Top cuts were applied where outliers were determined to be statistical and spatial in nature. • Compositing approaches were selected to honour the mineralisation style, geometry, expected grade variability and potential mining selectivity. Drilling samples were composited to: <ul style="list-style-type: none"> • Base Metal. 1m lengths honouring lode domain boundaries. The Datamine variable length composite was utilised, whereby any small uncomposited intervals (residuals) were divided evenly between the composites. • Gold. 2m lengths with a variable length composite function (best fit). • Exploratory Data Analysis, variogram modelling and estimation validation was completed within GeoAccess, Supervisor V8.8 and IsatisTM. • Linear estimation techniques were considered suitable due to the geological control on mineralisation and available data density. Minor domains of limited extent and information were estimated using Inverse Distance Squared (IDW2). A single, two or three pass estimation strategy was utilised dependent on the mineralisation domain geometry and data density. Blocks unestimated after the second or third pass were assigned default average waste grades: <ul style="list-style-type: none"> • Base Metal Interpolation. Using parameters derived from variograms, modelled in Supervisor, Ordinary Kriging (OK) and Inverse Distance Squared (IDW2) of a suite of 4 elements (Zinc%, Lead%, Silver ppm, Copper% estimation was completed using Datamine StudioRM software. • Gold Interpolation. Using parameters derived from variograms, modelled in Isatis. Ordinary Kriging (OK) and Inverse Distance Squared (IDW2) was undertaken for gold ppm variable using Surpac software. • Other Variables. Using parameters derived from variograms, modelled in Supervisor, Ordinary Kriging (OK) and Inverse Distance Squared (IDW2) estimation of Arsenic%, Antimony ppm and Cadmium ppm were completed using Datamine StudioRM software. • Search neighbourhoods broadly reflected the direction of maximum continuity within the plane of mineralisation, ranges, and anisotropy ratios from the variogram models. Neighbourhood parameters were optimised through KNA and validation of interpolation outcomes. • All estimation was completed within mineralisation domains using "hard" boundaries interpreted. • No other hard boundaries were applied (i.e. weathering profile). <p><u>Base Metal Information</u></p> <ul style="list-style-type: none"> • Mineralisation trends and structures were well defined by surface and underground DD and RC drilling and have highlighted high-grade shoots to the base metal mineralisation which is confirmed by historical mining. • A correlation analysis of the available elements by lode
--	---	--

		<p>domain showed little correlation between the base metal elements however the modelled variograms show similar orientations for all the base metals in the majority of the domains aligning with the orientation of the high-grade shoots.</p> <ul style="list-style-type: none"> • The zinc-equivalent reporting cut-off assumes the recovery of Zn, Cu, Au and Ag from the mineralised lodes. The recovery of these elements is supported by metallurgical studies, historic and current mining and processing data. • Estimation of the ancillary elements Cd, As and Sb was completed using the lodes/domains defined for the base metal mineralisation. • Block sizes used were 5 mE by 2.5 mN and 2.5 mRL with sub-blocks of 1.125 mE by 0.625 mN and 0.625 mRL. The parent block size was selected to provide suitable volume fill given the available data spacing and possible mining selectivity. The drilling data spacing varies from nominal 25 m x 25 m spacing and decreases to nominally 12.5 m x 12.5 m in the central areas of the deposit. Block model origins were selected to correlate with existing historical block models in use at Mungana. • Validation was completed by checking the global averages of composites versus model from each domain, by creating trend plots of composites versus model from each domain, by visual validation of grade trends in the model to ensure they honoured the input data and check estimation using an alternative estimation method. • No local estimation or Change of Support was undertaken. • No assumptions were made within the MRE with respect to deleterious variables or by-product.
Moisture	<ul style="list-style-type: none"> • Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. 	<ul style="list-style-type: none"> • The tonnages were estimated on a dry basis.
Cut-off parameters	<ul style="list-style-type: none"> • The basis of the adopted cut-off grade(s) or quality parameters applied. 	<ul style="list-style-type: none"> • The reporting approach implemented for the MRE to appropriately reflects variations, locations and variable mining methodologies currently in use at Mungana. <ul style="list-style-type: none"> • A Zinc Equivalent for Transitional and Fresh material east of 4000mE, and to the west of this below 2050mRL; <ul style="list-style-type: none"> • The Mineral Resource cut-off grade for reporting of underground global base metal resource at Mungana was 3.0% Zinc Equivalent (ZnEq). This was based upon conceptual economic evaluations (including NSR calculations), Grade Tonnage Curves and consideration of comparable size deposits of similar mineralisation style and tenor, historic extraction and recovery information. • The ZnEq calculation adjusts individual grades for all metals included in the metal equivalent calculation by applying the following modifying factors: <ul style="list-style-type: none"> • Metallurgical recoveries; <ul style="list-style-type: none"> • Zn = 97.2%, Cu = 97.8%, Au = 93.1% and Ag = 92.4%.

		<ul style="list-style-type: none"> • Metal Prices: Zn(AUD\$3,742/t), Cu(AUD\$7,803/t), Ag(AUD\$0.74/g) Au(AUD\$53.18/g). • Payability factors: <ul style="list-style-type: none"> • Zinc. Zinc metal payment terms (in zinc concentrate), • Copper. Copper concentrate metal payment terms, • Gold. Gold metal payment terms (in copper and lead concentrates), • Silver. Silver metal payment terms (in copper, lead and zinc concentrates). • The Zinc Equivalent formula was calculated as presented below: $\text{ZnEq} = (\text{Zn\%} * 0.972) + (\text{Cu\%} * 2.039) + (\text{Au ppm} * 1.323) + (\text{Ag ppm} * 0.018)$ • It is the opinion/experience of Auctus Resources that all the elements in the ZnEq calculation have a reasonable potential to be recovered and sold.
Mining factors or assumptions	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • It was assumed that Mungana could be potentially mined via medium scale mechanised underground mining methods. This assumption was based on conceptual economic evaluations and extraction methodologies, depths and recoveries utilized historically at Mungana. • No mining dilution or cost factors were applied to the estimate.
Metallurgical factors or assumptions	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Metallurgical recovery factors have been applied through the use of a Zinc Equivalent (ZnEq) for Mineral Resources and Resource Tabulations of Transitional and Fresh material east of 4000mE, and to the west of this below 2050mRL. Metallurgical recoveries are derived from previous test work and production data. • Entech understands further test work is planned to confirm expected gold recoveries within the proposed gold scavenging circuit and to identify possible deleterious, contaminant issues. • No factors or assumptions were made within the MRE with respect to deleterious variables or by-product. Entech was not aware of deleterious variables at the Mungana deposit which would materially affect eventual economic extraction of Mineral Resources. • Interpolation was undertaken for arsenic, cadmium, and antimony for metallurgical amenability monitoring.

Environmental factors or assumptions	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Mungana is an operating underground mine with a good understanding of the environmental impacts of mining and processing activities. The mine has a number of processes in place to manage and minimise environmental impact. Auctus has a current Environmental Authority (EA) permit and an Environmental Management Plan (EMP). These have been submitted and approved by the State Government of Queensland. The site has a current approved closure plan which is a requirement of the EMP and Plan of Operations. No further factors or assumptions were made by Entech within the MRE with respect to Environment.
Bulk density	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Bulk density data has been collected on drill core from 138 drill holes. The methods used were water immersion and laboratory pycnometer. Following discussion with site personnel, Entech concluded that the pycnometer data should be excluded from the density data used for analysis and estimation as it did not adequately account for porosity and broken ground. Overall there was very little correlation with base metal grades. This is considered unusual for a base metal deposit but may indicate issues with the historical density sample selection, limited sample size or condition of sample material which may have impacted meaningful correlations between density and sulphide values. To allow for some variability of density within the MRE, Entech chose to estimate density where data was available to trigger a robust estimate and assign background density values, by oxidation and lithology (based upon Density Study outcomes), where sufficient density measurements weren't available.
Classification	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> The Mungana underground Polymetallic Mineral Resource estimate contains Indicated and Inferred Mineral Resources only. Mineral Resources were classified on the basis of geological and grade continuity confidence, geological domaining, estimation quality parameters, and nominal drill spacing. Consideration has been given to all factors material to the Mineral Resource outcomes, including but not limited to: confidence in volume and grade delineation, continuity and preferential orientation mineralisation; quality of data underpinning Mineral Resources, mineralisation continuity experienced during previous, and current, underground operations, nominal drill hole spacing and estimation quality

	<p>the data).</p> <ul style="list-style-type: none"> Whether the result appropriately reflects the Competent Person's view of the deposit. 	<p>(conditional bias slope, number of samples, distance to informing samples).</p> <ul style="list-style-type: none"> Indicated Mineral Resources were defined where a moderate level of geological confidence in geometry, continuity, and grade was demonstrated, and were identified as areas where: <ul style="list-style-type: none"> Blocks were well supported by drill hole data, with drilling averaging a nominal 20m or less between drill holes. Inferred Mineral Resources were defined where a low level of geological confidence in geometry, continuity and grade was demonstrated, and were identified as areas where: <ul style="list-style-type: none"> Drill spacing was averaging a nominal 40m or less, or where drilling was within 50m of the block estimate. Entech has classified the smaller, less densely drilled, ancillary lodes (501, 503, 505 and 506) as Inferred. These lodes will require further drilling and evaluation prior to any potential production planning. The delineation of Indicated and Inferred Mineral Resources appropriately reflect the Competent Persons' view on the deposit.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of Mineral Resource estimates. 	<ul style="list-style-type: none"> Internal Audits and peer review were undertaken by Entech with a focus on independent resource tabulation, block model validation, verification of technical inputs, and approaches to domaining, interpolation, and classification.
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> 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 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 	<ul style="list-style-type: none"> The Mineral Resource estimates are considered to be globally representative of Base Metal and Gold Mineral Resources, but there is uncertainty relating to local representation of volume and grade due to the current variable drill hole spacing, small scale localised geological discontinuities and metal zonation. Local variances to the tonnage, grade, and metal distribution of the Mineral Resource estimate is expected with further definition drilling. It is the opinion of the Competent Person that these variances will not significantly affect economic extraction of the deposit. With respect to Mineral Resources estimated at the deposits, the geological interpretation for lithology, weathering, and mineralisation domains are adequate for the estimation of Indicated and Inferred Mineral Resources. The Mineral Resource statement relates to global tonnage and grade estimates. No formal confidence intervals nor recoverable resources were undertaken or derived.

	compared with production data, where available.	
--	---	--

Section 4 – Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<p>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</p> <p>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</p>	<p>The Mineral Resource used as the basis of this Ore Reserve was estimated by Entech in March 2018. This estimate has been reported to the requirements of the JORC Code, but has not been announced to the public market.</p> <p>The Mineral Resource Estimate is inclusive of the Ore Reserves.</p>
Site visits	<p>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</p> <p>If no site visits have been undertaken indicate why this is the case.</p>	<p>The Competent Person's most recent visit to the site and underground workings was from 26-28 February 2018.</p> <p>The Mungana Deeps area was flooded but the BMU underground mining area & surface infrastructure were accessible and inspected.</p>
Study status	<p>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</p> <p>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.</p>	<p>The Ore Reserve is underpinned by mining studies conducted to a Pre-Feasibility Study level in line with the geotechnical and metallurgical confidence.</p> <p>Modifying factors accurate to the study level have been applied based on detailed stope design analysis. Modelling indicates that the resulting mine plan is technically achievable and economically viable.</p>
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	<p>A cut-off Net Smelter Return (NSR) value was applied to the mine plan. The cut-off NSR was estimated based on:</p> <p>Metals spot process of: US\$1.11/lb Zn, US\$0.97/lb Pb, US\$3.10 Cu, \$18.80/oz Ag, \$1,312/oz Au (USD/AUD exchange rate 0.72).</p> <p>Metallurgical recoveries and concentrate deportments determined from relevant test work;</p> <p>Estimated mining costs based on current contracts rates.</p> <p>Processing and site costs based on site operating actuals.</p> <p>The calculated NSR cut-offs were;</p> <ul style="list-style-type: none"> Fully costed stoping cut-off - \$152/t; Incremental stoping cut-off - \$120/t; and Development ore cut-off - \$44/t.
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	A detailed mine design, schedule and financial model was completed for the Mungana Deeps as the basis for the Resource to Reserve conversion. The design has been based on underground mining methods that are commonly applied in many Australian underground operations and have been successfully applied at the mine previously.

	<p><i>by optimisation or by preliminary or detailed design).</i></p> <p><i>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.</i></p> <p><i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i></p> <p><i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></p> <p><i>The mining dilution factors used</i></p> <p><i>The mining recovery factors used.</i></p> <p><i>Any minimum mining widths used.</i></p> <p><i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></p> <p><i>The infrastructure requirements of the selected mining methods.</i></p>	<p><i>Due to the depth of the orebody, a mine plan based on underground mining methods has been applied. The orebody will be accessed via an existing decline of dimensions sufficient for 60 t haul trucks. The orebody will be extracted primarily using common mechanised longitudinal longhole stoping mining methods with cemented rock fill on a level spacing of 15 m. Mining progresses in a bottom-up sequence within 60 m high panels.</i></p> <p><i>A geotechnical assessment was conducted by an independent geotechnical expert as part of the pre-feasibility study to determine suitable mine design parameters, development design criteria, and ground support requirements.</i></p> <p><i>The 2018 Mineral Resource, which was estimated in accordance with the JORC Code (2012) was used for the stope optimization. The NSR cut-off value, and minimum mining width were the key factors applied to the stope optimization process.</i></p> <p><i>A 0.5 m dilution skin has been applied on both the hangingwall and footwall contacts based on geotechnical advice. The grade of this dilution is determined from the contained Resource. An additional 3% of material at waste grade has been applied to model fill dilution</i></p> <p><i>A mining recovery of 95% has been applied to longhole stopes. 5 m sill pillars have been modelled for stopes undercutting fill or historical voids based on geotechnical advice.</i></p> <p><i>A minimum planned mining width of 1.0 m has been applied to all stopes. This is prior to the 1.0 m of dilution being applied. The total minimum assumed stope void width is therefore 2 m.</i></p> <p><i>Inferred Mineral Resources are not included in the Ore Reserve Estimate. The grade of all Inferred resource material contained within the Reserve mine plan was set to zero.</i></p> <p><i>At the time of the Ore Reserve Estimate, the Mungana mine is in production and all required surface infrastructure is in place and operational. No additional infrastructure specific to the mining methods will be required.</i></p>
Metallurgical factors or assumptions	<p><i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></p> <p><i>Whether the metallurgical process is well-tested technology or novel in nature.</i></p> <p><i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></p> <p><i>Any assumptions or allowances made for deleterious elements.</i></p> <p><i>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.</i></p> <p><i>For minerals that are defined by a specification, has the ore reserve</i></p>	<p><i>A conventional crushing, grinding and flotation process will be applied. Metallurgical testing has been completed which confirms that the process is suited to the style of mineralisation. The circuit is configured to sequentially float copper, lead, then zinc ores.</i></p> <p><i>The process is conventional crushing, grinding and flotation. The processing facility has been commissioned and is performing as planned. The circuit reconfiguration that was commissioned early 2019 to sequentially float polymetallic ores has demonstrated successful flotation of King Vol ores. Whilst there is some variation in flotation performance across the Mungana composites, the circuit is suited to grind, float, dewater and filter the remaining Mungana ore.</i></p> <p><i>Locked cycle flotation tests were conducted on three ore zones. Weighted average grades and recoveries have been applied.</i></p> <p><i>Test work indicates deleterious elements include arsenic, antimony, iron and to some extent cadmium. Penalties for these elements have been estimated based on the offtake agreements expected grades from the MRE and metallurgical recovery and deportment assumptions from historical data and testwork.</i></p> <p><i>No bulk sample testwork has been completed. Ore was historically processed through the Mt Garnet plant, however flotation performance is not available.</i></p> <p><i>The required concentrate specifications have been considered in the estimation of the Ore Reserve.</i></p>

	<p>estimation been based on the appropriate mineralogy to meet the specifications?</p>	<p>The Mungana processing plant will have two separate and mutually exclusive streams, namely a base metals configuration (generating zinc, copper and lead concentrates) and a precious metals configuration (generating a precious metals copper concentrate). Material was assumed to be batch processed as one or the other based on whichever configuration provided the best NSR, which ultimately depended on the various commodity block grades.</p> <p>Recovery and deportment assumptions for the base metal concentrate streams are summarized below.</p> <table><tr><th>Metal</th><th>Recovery</th><th>Deportment to Zn Con</th><th>Deportment to Cu Con</th><th>Deportment to Pb Con</th></tr><tr><td>Zinc</td><td>98.4%</td><td>95.6%</td><td>3.6%</td><td>0.8%</td></tr><tr><td>Lead</td><td>96.2%</td><td>3.5%</td><td>8.0%</td><td>88.6%</td></tr><tr><td>Copper</td><td>98.1%</td><td>11.5%</td><td>86.1%</td><td>2.4%</td></tr><tr><td>Gold</td><td>59.6%</td><td>0.0%</td><td>84.7%</td><td>15.3%</td></tr><tr><td>Silver</td><td>89.9%</td><td>23.2%</td><td>51.0%</td><td>25.9%</td></tr><tr><td>Arsenic</td><td>21.4%</td><td>76.4%</td><td>23.6%</td><td>0.0%</td></tr><tr><td>Cadmium</td><td>94.2%</td><td>79.5%</td><td>20.5%</td><td>0.0%</td></tr><tr><td>Antimony</td><td>84.2%</td><td>74.3%</td><td>25.7%</td><td>0.0%</td></tr></table> <p>Recovery and deportment assumptions for the precious metal concentrate stream are summarized below.</p> <table><tr><th>Metal</th><th>Recovery</th><th>Deportment</th></tr><tr><td>Zinc</td><td>46.6%</td><td>100.0%</td></tr><tr><td>Lead</td><td>26.8%</td><td>100.0%</td></tr><tr><td>Copper</td><td>75.1%</td><td>100.0%</td></tr><tr><td>Gold</td><td>56.3%</td><td>100.0%</td></tr><tr><td>Silver</td><td>65.9%</td><td>100.0%</td></tr><tr><td>Arsenic</td><td>35.1%</td><td>100.0%</td></tr><tr><td>Cadmium</td><td>55.2%</td><td>100.0%</td></tr><tr><td>Antimony</td><td>84.2%</td><td>100.0%</td></tr></table>	Metal	Recovery	Deportment to Zn Con	Deportment to Cu Con	Deportment to Pb Con	Zinc	98.4%	95.6%	3.6%	0.8%	Lead	96.2%	3.5%	8.0%	88.6%	Copper	98.1%	11.5%	86.1%	2.4%	Gold	59.6%	0.0%	84.7%	15.3%	Silver	89.9%	23.2%	51.0%	25.9%	Arsenic	21.4%	76.4%	23.6%	0.0%	Cadmium	94.2%	79.5%	20.5%	0.0%	Antimony	84.2%	74.3%	25.7%	0.0%	Metal	Recovery	Deportment	Zinc	46.6%	100.0%	Lead	26.8%	100.0%	Copper	75.1%	100.0%	Gold	56.3%	100.0%	Silver	65.9%	100.0%	Arsenic	35.1%	100.0%	Cadmium	55.2%	100.0%	Antimony	84.2%	100.0%
Metal	Recovery	Deportment to Zn Con	Deportment to Cu Con	Deportment to Pb Con																																																																						
Zinc	98.4%	95.6%	3.6%	0.8%																																																																						
Lead	96.2%	3.5%	8.0%	88.6%																																																																						
Copper	98.1%	11.5%	86.1%	2.4%																																																																						
Gold	59.6%	0.0%	84.7%	15.3%																																																																						
Silver	89.9%	23.2%	51.0%	25.9%																																																																						
Arsenic	21.4%	76.4%	23.6%	0.0%																																																																						
Cadmium	94.2%	79.5%	20.5%	0.0%																																																																						
Antimony	84.2%	74.3%	25.7%	0.0%																																																																						
Metal	Recovery	Deportment																																																																								
Zinc	46.6%	100.0%																																																																								
Lead	26.8%	100.0%																																																																								
Copper	75.1%	100.0%																																																																								
Gold	56.3%	100.0%																																																																								
Silver	65.9%	100.0%																																																																								
Arsenic	35.1%	100.0%																																																																								
Cadmium	55.2%	100.0%																																																																								
Antimony	84.2%	100.0%																																																																								
Environmental	<p>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.</p>	<p>Full environmental approval has been granted for the Mungana project, which is currently operational.</p>																																																																								
Infrastructure	<p>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation</p>	<p>At the time of this Ore Reserve, the Mungana mine is in production with all required surface infrastructure already installed. The mine is located adjacent to Auctus' Mungana processing facility. Accommodation will be provided at Auctus' accommodation</p>																																																																								

	<i>(particularly for bulk commodities), labour accommodation; or the ease with which the infrastructure can be provided, or accessed.</i>	<i>village in the nearby town of Chillagoe.</i>																					
Costs	<p><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></p> <p><i>The methodology used to estimate operating costs.</i></p> <p><i>Allowances made for the content of deleterious elements.</i></p> <p><i>The source of exchange rates used in the study.</i></p> <p><i>Derivation of transportation charges.</i></p> <p><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></p> <p><i>The allowances made for royalties payable, both Government and private.</i></p>	<p><i>Capital costs have mainly been sourced from supplier quotes, and a request for quotation (RFQ) provided by the current mining contractor.</i></p> <p><i>Mining operating costs have been determined by applying the schedule of rates from the incumbent contractor to the detailed mining schedule. Processing and site general and administration costs have been estimated based on the site operational data.</i></p> <p><i>Penalty costs for the deleterious elements have been determined by applying the indicative terms from the offtake agreement to the estimated specifications of the concentrate produced.</i></p> <p><i>Exchange rate current at the time of the study was applied (USD: AUD 0.72: 1.00).</i></p> <p><i>The ore is hauled directly to the Mungana processing facility from the portal and costs are based on the contractor rates.</i></p> <p><i>Transportation cost of concentrate has been based on the existing concentrate haulage contract.</i></p> <p><i>The treatment and refining charges, including deductions and payabilities are sourced from the existing offtake agreement.</i></p> <p><i>All relevant government royalties have been applied to the financial model. No other royalties are applicable.</i></p>																					
Revenue factors	<p><i>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.</i></p> <p><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></p>	<p><i>The head grade used in the calculation of revenue was determined based on the mineral resource model and the detailed mine design. The head grade includes dilution.</i></p> <p><i>Consensus metals pricing has been applied to the financial model as follows:</i></p> <table border="1"> <thead> <tr> <th>Input</th><th>Unit</th><th>Assumption</th></tr> </thead> <tbody> <tr> <td>Exchange Rate</td><td>AUD:USD</td><td>0.72</td></tr> <tr> <td>Zinc Price</td><td>USD/lb Zn</td><td>1.11</td></tr> <tr> <td>Lead Price</td><td>USD/lb Pb</td><td>0.97</td></tr> <tr> <td>Copper Price</td><td>USD/lb Cu</td><td>3.1</td></tr> <tr> <td>Gold Price</td><td>USD/oz Au</td><td>1312.7</td></tr> <tr> <td>Silver Price</td><td>USD/oz Ag</td><td>18.8</td></tr> </tbody> </table> <p><i>Concentrate transport costs, treatment costs, penalties and deductions have been sourced from actual or indicative take-off agreements.</i></p>	Input	Unit	Assumption	Exchange Rate	AUD:USD	0.72	Zinc Price	USD/lb Zn	1.11	Lead Price	USD/lb Pb	0.97	Copper Price	USD/lb Cu	3.1	Gold Price	USD/oz Au	1312.7	Silver Price	USD/oz Ag	18.8
Input	Unit	Assumption																					
Exchange Rate	AUD:USD	0.72																					
Zinc Price	USD/lb Zn	1.11																					
Lead Price	USD/lb Pb	0.97																					
Copper Price	USD/lb Cu	3.1																					
Gold Price	USD/oz Au	1312.7																					
Silver Price	USD/oz Ag	18.8																					
Market assessment	<p><i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></p> <p><i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></p> <p><i>Price and volume forecasts and the basis for these forecasts.</i></p> <p><i>For industrial minerals the customer specification, testing</i></p>	<p><i>The current and foreseeable market conditions are considered favourable to support the assumptions regarding commodity prices used to determine revenues from sale of the metals concentrates that will be produced from Mungana, particularly for zinc, which is the major contributor to the project revenue.</i></p> <p><i>An analysis of the potential market has been undertaken. Offtake agreements are currently in place for the sale of concentrate from the Mungana processing plant</i></p> <p><i>Price and volume forecasts are based on consensus pricing analysis from industry experts.</i></p> <p><i>This section is not applicable as the product is not an industrial mineral.</i></p>																					

	<i>and acceptance requirements prior to a supply contract.</i>	
<i>Economic</i>	<p><i>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</i></p> <p><i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></p>	<p><i>The Mungana Ore Reserve has been assessed in a detailed financial model.</i></p> <p><i>The Reserve plan is economically viable and has a positive NPV at a 8% discount rate at the stated commodity prices and exchange rate.</i></p> <p><i>Sensitivity analysis on metals prices, operating costs, capital costs, exchange rate and discount rate shows that the NPV remains positive over a reasonable range of unfavourable movements in these areas.</i></p>
<i>Social</i>	<i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i>	<i>All required agreements are in place for operation.</i>
<i>Other</i>	<p><i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></p> <p><i>Any identified material naturally occurring risks.</i></p> <p><i>The status of material legal agreements and marketing arrangements.</i></p> <p><i>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.</i></p>	<p><i>No naturally occurring risks have been identified that could materially impact the Ore Reserve Estimate.</i></p> <p><i>An offtake agreement is in place.</i></p> <p><i>All necessary government approvals have been granted, and mining at Mungana is ongoing at time of reporting.</i></p>
<i>Classification</i>	<p><i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></p> <p><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></p> <p><i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></p>	<p><i>The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss. No Measured material was included in the Mineral Resource. The Competent Person considers that the assumptions used to determine the modifying factors are not yet at sufficient detail to convert any material to a Proved Reserve.</i></p> <p><i>The result appropriately reflects the Competent Person's view of the deposit.</i></p>
<i>Audits or reviews</i>	<i>The results of any audits or reviews of Ore Reserve estimates.</i>	<i>The Ore Reserve estimate has been peer-reviewed by Entech internally.</i>

<p><i>Discussion of relative accuracy/ confidence</i></p>	<p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>	<p><i>The Mungana design, schedule, and financial model on which the Ore Reserve is based has been completed to a Pre-Feasibility Study standard, with a corresponding level of confidence.</i></p> <p><i>The following is noted regarding confidence in the confidence level of the Ore Reserve Estimate:</i></p> <ul style="list-style-type: none"> ○ <i>The mining methods applied are commonly used in Australian underground mining and enable the application of typical equipment and personnel skills</i> ○ <i>Metallurgical test work has been completed to an appropriate level of detail to justify the Reserve estimate.</i> ○ <i>Geotechnical assessment has been completed to an appropriate level of detail to justify the Reserve estimate</i> ○ <i>The project has received all necessary approvals and is in operation</i> ○ <i>Agreements are in place with offtake partners;</i> ○ <i>Future metals prices and exchange rate forecast carry an inherent level of risk</i> ○ <i>There is a degree of uncertainty associated with geological estimates. The Reserve classifications reflect the levels of geological confidence in the estimates.</i> ○ <i>There is a degree of uncertainty regarding estimates of the impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.</i> ○ <i>The Ore Reserve is a global estimate.</i>
---	---	---

ANNEXURE C: JORC Table 1 – Girofla Mineral Resource estimate

Section 1 – Key Classification Criteria

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>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.</i>	<p>Samples used in the Mineral Resource estimate were obtained through diamond (DD) drilling methods collected from 2017 through 2018.</p> <p>The sampling and analytical methodology is summarised below:</p> <ul style="list-style-type: none"> DD core was cut in half using a core saw. Samples were generally taken at 1 m intervals, or to geological boundaries as dictated by the geologist. Base metals analysis was by four acid digestion with an ICP-AES finish.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	DD core has been sawn in half using a core saw.
	<i>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 (e.g. "RC 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 (e.g. submarine nodules) may warrant disclosure of detailed information.</i>	<p>All work has been completed at ALS Global's laboratory in Townsville.</p> <p>Base metals (and other elements) analysis was generally by perchloric and four-acid acid digestion with ICP-OES finish.</p> <p>Samples were generally 1 m in length.</p>
Drilling techniques	<i>Drill type (e.g. core, RC, 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.).</i>	<p>The full Girofla drillhole database comprises 56 holes for 18,317.99 m. Many holes are historical and do not intersect the Mineral Resource area.</p> <p>Auctus drilled 18 holes for a total of 10,555 m from 2017 through 2018 to delineate the Girofla Mineral Resource. Only eight of these holes intersect the modelled mineralisation. One hole drilled in 1995 also intersected the Mineral Resource area.</p> <p>Although some reverse circulation (RC) drilling was completed as pre-collars, all intersections through the mineralisation were completed using DD drilling.</p>
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	Drill core is pieced together, and the length of drill core is measured and compared with the theoretical interval from the depths written on the core blocks. Recovery is then recorded as a percentage calculated from measured core versus drilled interval. The host rocks and mineralised intervals are generally very competent, with core recoveries averaging 99%.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Core is cut longitudinally using a core saw, with half-core sampled for analysis. When oriented, core is cut in half longitudinally approximately 5 mm to the right of the orientation line. Waste samples both before and after the mineralised intercept are also sampled half-core.

	<i>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.</i>	As core recoveries are generally very high, it is assumed the potential for bias is considered low.
Logging	<i>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.</i>	All DD core is geologically/geotechnically logged. Geotechnical measurements over 1 m intervals are recorded for weathering/oxidation, core recovery, rock quality designation (RQD), fracture count, field hardness and strength.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	Logging is generally qualitative in nature. All core stored has been photographed wet and dry.
	<i>The total length and percentage of the relevant intersections logged.</i>	All RC chips (pre-collars) and DD core has been geologically logged.
Subsampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Core is longitudinally cut in half with a core saw. HQ and NQ2 sized diamond core are considered a representative sample of the in-situ material.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	For pre-collars, Auctus collected RC chip samples from a three-stage splitter (7:1) mounted beneath the cyclone. Samples were collected in large green UV resistant plastic bags for the 7/8 split and smaller calico tie bags for the 1/8 split. The smaller calico bags were generally sent for assay. When occasional wet samples were delivered, drilling was often halted if contamination was noticed, to clean the cyclone and splitter. If the hole was making large volumes of water, and delivery of dry sample was not possible, RC drilling was stopped, and a change was made to core.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Sampling intervals are selected by a geologist and a drillhole sampling sheet is completed. Samples are usually 1 m in length and are only sampled to geological contacts occasionally. All core is cut in half using a core saw. Half core samples are placed in calico bags which are then inserted into polyweave sacks. Polyweave sacks are then transported to the laboratory. Sample preparation involved drying and crushing the entire sample such that >70% is –6 mm. The sample was then riffle split to reduce size to c. 2–3 kg and then pulverised in an LM5 bowl pulveriser (targeting >85% passing 75 µm), before scooping out a 250–300 g pulp for analytical determinations.
	<i>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</i>	Quality control (QC) samples included certified reference materials (CRMs), pulp duplicates and check assays.
	<i>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.</i>	No field duplicate sampling was carried out.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes are considered to be appropriate to the grain size of the material being sampled.

Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	The assaying and laboratory procedures used are consistent with industry good practice. The methodology employed for the main elements of interest are broadly summarised below. First-pass analyses on all samples comprised a comprehensive 33-element suite by method ME-ICP61, a four-acid digest with ICP-AES finish. See below for list of the elements. Samples with As, Cu, Pb and Zn >10,000 ppm, Cd >1,000 ppm and Ag >100 ppm were routinely re-assayed by method OG62, a four-acid digest method, with a 0.25 g charge and a volumetric ICP-AES finish. Samples with S >10,000 ppm were re-assayed by method S-IR08, sulphur determination by Leco furnace and infrared spectroscopy at the ALS laboratory in Brisbane.
Verification of sampling and assaying	<i>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.</i>	No geophysical tools were used in the preparation of the Mineral Resource estimate (MRE).
	<i>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.</i>	QC samples were inserted by Auctus. The QC samples that have been collected are summarised below: <ul style="list-style-type: none"> • Blanks were generally inserted at a rate of 1:20 to 1:30. • CRMs were generally inserted at a rate of 1:20 samples. • The 1985 discovery hole "666", was subject to check sampling, with original assaying carried out by Analabs, and check assaying carried out on pulps by ALS. • Two additional holes drilled by Auctus GFD05W4 and GFD06W1 were also subject to check sampling, with half core sent to ALS and quarter core sent to Mungana Laboratory. Following review of all QC data, and inspection of data collection procedures, the Competent Person considered that sufficient confidence can be placed in the dataset to support reporting an MRE in accordance with the JORC Code.
	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	All mineralisation intersections, both significant and anomalous are verified by site personnel during the drillhole validation process. Assay results are received in csv format and loaded into the database. A representative of the Competent Person from CSA Global also verified the some of the significant intersections during the site visit that was completed in March 2019.
	<i>The use of twinned holes.</i>	No twinning has been completed.
Location of data points	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Templates have been set up to facilitate geological logging. Prior to the import into the central database, logging data is validated for conformity and overall systematic compliance by the geologist.
	<i>Discuss any adjustment to assay data.</i>	No adjustments were made to the analytical data, other than replacing below detection results with a value equal to half the detection limit or zero.
	<i>Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	All holes were surveyed with either a Trimble total station or RTK GPS producing an accuracy of approximately ± 1 cm. A Reflex gyroscope was used for downhole surveys, with readings taken every 10 m to 20 m.
	<i>Specification of the grid system used.</i>	Data is based on MGA Zone 55 and converted to a mine grid.

	<i>Quality and adequacy of topographic control.</i>	A topographic surface was provided by Auctus in local grid coordinates in DXF format.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	The data spacing is irregular. The Girofla deposit forms a pipe-like shape with limited strike extent (approximately 30 m). The width is also approximately 30 m. Drillholes are approximately 20 m apart along strike by 25–120 m apart down dip over the area modelled.
	<i>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.</i>	The Competent Person believes the data spacing is sufficient to support the classification applied to the MRE.
	<i>Whether sample compositing has been applied.</i>	Sample were composited to 1 m, consistent with the dominant sample length.
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	Holes intersect the lodes at 15° to 40° angles, which is sub-optimal. The Competent Person considers that the orientation of the sampling is unlikely to have caused biased sampling.
	<i>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.</i>	No bias based on hole orientation is known to exist.
Sample security	<i>The measures taken to ensure sample security.</i>	Chain of custody has been managed by Auctus. Core is collected daily from the rig and transported to the core yard, where it is laid on racks for logging and sampling. All core is photographed when marked up for a permanent record. RC samples are collected at the rig and transport to the core processing facility. On completion of logging, RC and DD samples are tied and bagged for transport to Townsville by commercial courier. Assay results are currently received from the laboratory in digital format. Once data is finalised, it is transferred to a Microsoft Access database.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	No external audit of sampling techniques and data has been undertaken.

Section 2 – Key Classification Criteria

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<i>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.</i>	The Mineral Resources are entirely hosted within granted Mining Lease (ML) 4928, which was held by Mungana Pty Ltd and then transferred to Mungana Gold Mines Ltd in 2014. Mungana Gold Mines Ltd was renamed Atherton Resources Ltd which was then acquired by Auctus Resources Pty Ltd.
	<i>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.</i>	No impediments are known to exist.

Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	No exploration completed by other parties is relevant to this Mineral Resource estimate.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	<p>The Girofla deposit occurs at the north-western end of a line of volcanic vents in the Mungana Diatreme. The vents, in coral-reef limestone are filled with Breccia. The breccia fragments, generally less than half an inch in dimension, are chert and the matrix, which is blue-clay in the workings, becomes silicified to a hard cement at surface.</p> <p>The Girofla vent is almost vertical and circular/pipe like in form. The nature of the mineralisation varies significantly down dip.</p> <p>Some knowledge of the geology was gained from historical mining, which occurred from 1092 to 1914 (Mungana (Chillagoe) Mining Co. Ltd), and from 1921 to 1927 (Queensland Government).</p>
		<p>On the 710 ft level, an annular ring of breccia occurs between the ore and limestone. In other places, the ore formed against the limestone wall of the vent. The wide ore at the 410 ft level coincided with a zone of supergene minerals.</p> <p>Primary ore consists of pyrite, pyrrhotite and marcasite, with lesser amounts of galena, sphalerite, chalcopyrite, jamesonite and tetrahedrite.</p> <p>The stages of increasing supergene alteration include (Broadhurst and Edwards, 1953):</p> <ul style="list-style-type: none"> • Rich supergene sulphide ore formed by the replacement of other sulphides by chalcocite and covellite. • Copper carbonates and limonite, or alternative oxidation products such as cuprite and native copper, developing from oxidation of the abundant supergene sulphides. • Limonite rich lead ores, from which most of the copper has been leached.

Drillhole information	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:</i></p> <ul style="list-style-type: none"> • <i>Easting and northing of the drillhole collar</i> • <i>Elevation or RL (Reduced Level – Elevation above sea level in metres) of the drillhole collar</i> • <i>Dip and azimuth of the hole</i> • <i>Downhole length and interception depth</i> • <i>Hole length.</i> <p><i>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.</i></p>	<p>The full Girofla drillhole database comprises 56 holes for 18,317.99 m.</p> <p>Nine drillholes intersect the “sulphide pipe” mineralisation (limit of Mineral Resource) at Girofla. These include:</p> <ul style="list-style-type: none"> • GFD01 (325.85 m to 355.6 m) • GFD07 (369.9 m to 425.55 m) • 666 (436 m to 452 m) • GFD03W1 (538.64 m to 587.5 m) • GFD04 (559.66 to 574.66 m) • GFD06W2 (552.35 m to 612.2 m) • GFD06W1 (543 m to 625.8 m) • GFD06W5 (695.2 m to 774 m) • GFD05W4 (704 m to 718 m). <p>There are another seven holes that lie along strike from the Girofla sulphide pipe mineralisation over the vertical extent of the modelled deposit, which did not intersect economic sulphide mineralisation. These have been used to limit the interpretation of the mineralisation model which supports this Mineral Resource estimate:</p> <ul style="list-style-type: none"> • 934 • GFD02 • 932 • GFD08 • GFD06W3 • MND005 • 837. <p>A summary of the drilling that supports the Mineral Resource estimate is provided above. Specific details regarding drill hole collar locations, hole dips/azimuths, downhole lengths and intersection depths, and hole lengths have not been provided on the basis that this information is not material to understanding the Mineral Resource estimate reported herein.</p>
------------------------------	--	---

Data aggregation methods	<i>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.</i>	This table has been prepared to support the public release of a Mineral Resource estimate. In this announcement, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades were not used and Exploration Results have not been
	<i>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.</i>	This table has been prepared to support the public release of a Mineral Resource estimate (MRE). In this announcement, aggregate intercepts were not used and Exploration Results have not been reported.
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	Metal equivalent values are not reported.
Relationship between mineralisation widths and intercept lengths	<i>These relationships are particularly important in the reporting of Exploration Results.</i>	Holes intersect the lodes at 15–40° angles, which is sub-optimal. Intercept widths are therefore much greater than mineralisation widths. Collar locations are selected based on considerations of mining-heritage areas and national park boundaries on surface, as well as minimisation of drill metres. More recent drilling has involved wedging off a parent hole in order to reduce drill metres and to achieve more appropriate angles of intersection with the mineralisation. In preparing the mineralisation model which define the limits to the Mineral Resource reported herein, the true widths of the mineralisation are honored. Drill hole intercept lengths are not part of this announcement.
	<i>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.</i>	Holes have been drilled at various dips and azimuths and therefore intersect the lodes at variable angles. Most holes are quite oblique to the trend of the mineralisation, as described above.
	<i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. “downhole length, true width not known”).</i>	Downhole lengths of drill holes are not reported in this announcement.
Diagrams	<i>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 drillhole collar locations and appropriate sectional views.</i>	Relevant maps and diagrams are included in the body of the report.

Balanced reporting	<i>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.</i>	Exploration Results (drill hole intersections) have informed the Mineral Resource estimate. Summary details relating to this drilling is provided under “Drillhole Information”. A representative of the Competent Person visited site on 15 March 2019 and inspected significant intersections. In each of the drillholes inspected, the abundance of sphalerite and galena was consistent with the correlated Zn and Pb grades.
Other substantive exploration data	<i>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.</i>	No substantive exploration data exists that has not been mentioned elsewhere in this table.
Further work	<i>The nature and scale of planned further work (e.g. 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</i>	A metallurgical testwork program is underway. Preliminary results suggest there is potential to produce a saleable product via flotation methods. Preliminary economic assessment will be completed in the near future. Additional drilling is required to increase the confidence in this Mineral Resource estimate.

Section 3 – Key Classification Criteria

Criteria	JORC Code explanation	Commentary
Database integrity	<i>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.</i>	Core logging is completed at the site core yard using project-specific logging codes. Data is then loaded directly into the site database. Assay results are currently received from the laboratory in digital format. Once data is finalised, it is transferred to a Microsoft Access database.
	<i>Data validation procedures used.</i>	CSA Global checked the drillhole files for the following errors prior to Mineral Resource estimation: <ul style="list-style-type: none"> • Absent collar data • Multiple collar entries • Questionable downhole survey results • Absent survey data • Overlapping intervals • Negative sample lengths • Sample intervals which extended beyond the hole depth defined in the collar table.

Site visits	<i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i>	<p>Aaron Meakin, Competent Person for the MRE, completed a site visit from 26 September to 27 September 2018.</p> <p>During the site visit, the following was completed:</p> <ul style="list-style-type: none"> • Inspection of sample processing facilities • Brief inspection of Girofla prospect site. <p>The core shed appeared to be relatively clean and well-organised, and related procedures were being followed. Data collection systems were found to be consistent with industry good practice. Furthermore, geological controls to the mineralisation were sufficiently understood to enable a Mineral Resource to be reported in accordance with the JORC Code.</p> <p>A representative of the Competent Person completed a site visit from 12 March to 16 March 2019. During the site visit, the following was completed:</p> <ul style="list-style-type: none"> • Inspection of several drillholes from Girofla • inspection of Girofla prospect site.
	<i>If no site visits have been undertaken indicate why this is the case.</i>	Not applicable.
Geological interpretation	<i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i>	<p>Mineralisation interpretation was completed by CSA Global. Preliminary statistical analysis was completed to assess if a cut-off grade could be used to define boundaries to the mineralisation (the mineralisation indicator grade).</p> <p>Following statistical analysis, a decision was made to use 2% Zn+Pb and >10% S to define the boundaries to the mineralisation. There is a step change in grade between unmineralised and mineralised material, hence the interpretation is not sensitive to slight changes in the modelling cut-off grade. There is a strong correlation between Ag and Pb, hence very little Ag sites outside the modelled envelope.</p>
	<i>Nature of the data used and of any assumptions made.</i>	No material assumptions have been made which effects the MRE reported herein.
	<i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i>	<p>Alternative interpretations are not likely to materially impact on the global MRE.</p> <p>It is likely that a greater understanding of the geometry of the sulphide pipe will be developed over time. This may lead to separate domaining and alternative interpretation of this material in the future.</p> <p>The area around the modelled pipe has not been extensively drill tested, hence there is considered to be potential to identify additional sulphide pipe breccias.</p>
	<i>The use of geology in guiding and controlling Mineral Resource estimation.</i> <i>The factors affecting continuity both of grade and geology.</i>	The main controls to the mineralisation are structural, and mineralisation occurs as a single breccia pipe.
Dimensions	<i>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.</i>	The Girofla deposit constitutes one lens that has been modelled between 5,270 m E and 5,350 m E, 4,900 m N and 4,970 m N. The dip extent extends from -450 m RL to 50 m RL. The average width and strike of the modelled lode is approximately 30 m by 30 m.

Estimation and modelling techniques	<i>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.</i>	Quantitative kriging neighborhood analysis (QKNA) was undertaken to assess the effect of changing key kriging neighborhood parameters on block grade estimates. The main lode within each deposit grouping was subject to QKNA. Kriging efficiency and slope of regression were determined for a range of block sizes, minimum/maximum samples, search dimensions and discretisation grids. A three-pass search ellipse strategy was adopted whereby search ellipses were progressively increased if search criteria could not select sufficient data for the block estimate. The primary, secondary and tertiary search ellipse dimensions represent 50%, 100 % and 200% of the variogram range respectively. Ordinary kriging was adopted to interpolate grades into cells. Statistical analysis was completed using software. All geological modelling and grade estimation were completed using Datamine software.
	<i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i>	No Mineral Resource has been previously reported for Girofla.
	<i>The assumptions made regarding recovery of by-products.</i>	No assumptions have been made regarding recovery of by-products.
	<i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i>	Fe, S, Sb and As were estimated in addition to the potentially economic elements Zn, Pb, Ag and Cu.
	<i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i>	A 10 m E by 10 m N by 10 m RL parent cell size was used with sub-celling to 2 m E by 2 m N by 2 m RL to honour wireframe boundaries. The drillhole data spacing is highly variable, from 20 to 120 m apart. The block size represents approximately half of the drill spacing in the more densely drilled central area of the deposit.
	<i>Any assumptions behind modelling of selective mining units.</i>	No assumptions were made regarding selective mining units.
	<i>Any assumptions about correlation between variables</i>	No assumptions have been made regarding correlation between variables.
	<i>Description of how the geological interpretation was used to control the resource estimates.</i>	The main controls to the mineralisation are structural. Mineralisation occurs as a single pipe-like breccia, which formed as a volcanic vent.
	<i>Discussion of basis for using or not using grade cutting or capping.</i>	The requirement for top-cuts was reviewed given the potential for extreme grades to bias block grade estimation. For each variable in each statistical domain, histograms and log-probability plots were reviewed to determine the point at which the number of samples supporting a high-grade distribution diminishes.
	<i>The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.</i>	Drillhole grades were initially visually compared with cell model grades. Domain drillhole and block model statistics were then compared. Swath plots were also created to compare drillhole grades with block model grades for easting, northing and elevation slices throughout the deposit. The block model reflected the tenor of the grades in the drillhole samples both globally and locally.

Moisture	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i>	Tonnages are estimated on a dry basis.
Cut-off parameters	<i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i>	The Mineral Resource reported above a cut-off grade of 3% Zn+Pb.
Mining factors or assumptions	<i>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.</i>	In selecting the reporting cut-off grade, the mining method has been considered. Girofla is an underground mining proposition, mainly due to the close proximity to the Mungana underground mine and the fact that near-surface mineralisation is mined out.
Metallurgical factors or assumptions	<i>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.</i>	Mungana operates a conventional floatation circuit. Mungana has a long history of producing and selling a concentrate by flotation methods with no material issues with deleterious elements.
Environmental factors or assumptions	<i>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.</i>	It is assumed that there will be no significant environmental impediments to developing the project. This is an early stage project and potential environmental impacts require review.
Bulk density	<i>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.</i>	A total of water immersion 252 density measurements were available to support the MRE. Density was interpolated into the block model.

	<i>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.</i>	The Archimedes method measurements were determined by measuring the weight of part or the entire sample in air and water and then applying the formula bulk density = $\text{weight_air}/(\text{weight_air}-\text{weight_water})$. Samples of drill core that contain “holes” or “vughs”, are very porous, crumbly and incompetent or clay-rich are sealed with a masonry sealant/wax and allowed to dry prior to bulk density determination.
	<i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i>	After considering the results of the above analysis, it was clear that there was a reasonable amount of Archimedes density data in the modelled mineralisation envelope at Girofla. Density was therefore estimated in the block model.
Classification	<i>The basis for the classification of the Mineral Resources into varying confidence categories.</i>	The Mineral Resource has been classified following due consideration of all criteria contained in Section 1, Section 2 and Section 3 of JORC 2012 Table 1. After considering data quality and geological continuity, grade estimation quality was assessed. The Competent Person classified the entire Girofla Mineral Resource as Inferred.
	<i>Whether appropriate account has been taken of all relevant factors (i.e. 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).</i>	Appropriate account has been taken of all relevant criteria including data integrity, data quantity, geological continuity, and grade continuity.
	<i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i>	The MRE appropriately reflects the Competent Person's views of the deposit.
Audits or reviews	<i>The results of any audits or reviews of Mineral Resource estimates.</i>	The current model has not been audited by an independent third party but has been subject to CSA Global's internal peer review processes.
Discussion of relative accuracy/ confidence	<i>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.</i>	The Mineral Resource accuracy is communicated through the classification assigned to this Mineral Resource. The MRE has been classified in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table.
	<i>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.</i>	The Mineral Resource statement relates to a global tonnage and grade estimate. Grade estimates have been made for each block in the block model.
	<i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i>	No production data is available.

Annexure D: JORC Table 1 – Victoria and Morrison Deeps Mineral Resources

Section 1 – Key Classification Criteria

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>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.</i>	<p>Samples used in the Mineral Resource estimate were obtained through reverse circulation (RC) and diamond (DD) drilling methods collected from campaigns completed from 2005 through 2018.</p> <p>The sampling and analytical methodology is summarised below:</p> <ul style="list-style-type: none"> • Kagara (2005 to 2012). RC samples were collected via an onboard splitter which delivered to large plastic bags over 1 m intervals. Sub-samples were taken from each bag by the spear technique. Composites were taken at 2 m to 4 m (less frequently) intervals for analysis. Damp or wet samples, not suitable for spear sampling, were sampled by taking several small hand grab samples from throughout the bulk sample. DD core was cut in half using a core saw. Samples were generally taken at 2 m intervals, or to geological boundaries as dictated by the geologist. Gold analysis was generally by fire assay with an atomic absorption spectroscopy (AAS) finish. Base metals (and other elements) analysis was generally by perchloric acid digestion with an inductively couple plasma-optical emission spectrometry (ICP-OES) finish. • Auctus (2017 to 2018). RC chip samples were collected at 1 m intervals from a three-stage splitter (7:1) mounted beneath the cyclone. Samples were collected in large green UV resistant plastic bags for the 7/8 split and smaller calico tie bags for the 1/8 split. Sample intervals were generally marked at a nominal width of 1 m in mineralisation, ± 0.5 m. DD core was cut in half using a core saw. Samples were generally taken at 1 m intervals, or to geological boundaries as dictated by the geologist. Gold analysis was by fire assay with an AAS finish. Base metals analysis was by four acid digestion with an ICP-OES finish.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	<p>DD core has been sawn in half using a core saw.</p> <p>When occasional wet samples were delivered during RC drilling, drilling was often halted if contamination was noticed, to clean the cyclone and splitter. If the hole was making large volumes of water, and delivery of dry sample was not possible, RC drilling was stopped, and a change was made to core.</p>
	<i>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 (e.g. "RC 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 (e.g. submarine nodules) may warrant disclosure of detailed information.</i>	<p>Gold is determined by 25-50-gram fire assay with determination by AAS methods. All work has been completed at either SGS's laboratory (Kagara) or ALS Global's laboratory (Auctus) in Townsville.</p> <p>Base metals (and other elements) analysis was generally by perchloric and four-acid acid digestion with ICP-OES finish.</p> <p>Samples were generally 1 to 2 m in length.</p>

Criteria	JORC Code explanation	Commentary
Drilling techniques	<i>Drill type (e.g. core, RC, 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.).</i>	<p>Drilling has taken place over numerous periods since 1967. Holes drilled in 1967 and 1978 were removed from this Mineral Resource estimate due to concerns about the quality of the data. There were four holes removed (RC1, RC2, RC3 and RD103).</p> <p>Kagara drilled 76 holes for 25,538.3 m in three periods from 2005 through 2012. RC (generally 5.5" hammer) and DD drilling (HQ and NQ2) methods were employed.</p> <p>Auctus drilled 87 holes for a total of 10,474 m. RC (generally 5.5" hammer) and DD drilling (HQ and NQ2) methods were employed.</p>
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	<p>RC sample weight data was not consistently entered in the database. Furthermore, within the sample weight field in the database, most samples were assigned a weight of 3 kg which suggests they are estimated weights. This precluded meaningful analysis of this data. Areas of high-water inflow and poor ground conditions are noted near surface, hence there is a requirement to better understand the RC sample quality in the oxidised and transitional zones. This has been considered when classifying these areas of the Mineral Resource.</p> <p>Drill core is pieced together, and the length of drill core is measured and compared with the theoretical interval from the depths written on the core blocks. Recovery is then recorded as a percentage calculated from measured core versus drilled interval. The host rocks and mineralised intervals are generally very competent in fresh material, with core recovery very high, in excess of 95%.</p>
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Core is cut longitudinally using a core saw, with half-core sampled for analysis. When oriented, core is cut in half longitudinally approximately 5 mm to the right of the orientation line. Waste samples both before and after the mineralised intercept are also sampled half-core.
	<i>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.</i>	No specific study has been conducted to determine a relationship between sample recovery and grade, however as core recoveries are generally very high, it is assumed the potential for bias is considered low in fresh material. Further interrogation of the RC sample data is recommended to assess if there is a relationship between sample recovery and grade.
Logging	<i>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.</i>	All diamond drill core and RC chips are geologically/geotechnically logged. Information recorded included oxidation, sample state (wet, moist, dry), lithology, minerals, %sulphides and brief notes. Percentages of sulphide minerals (pyrite, pyrrhotite, sphalerite, chalcopyrite and galena) and magnetite were entered and loaded as individual fields from August 2008.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	Logging is generally qualitative in nature. All core stored has been photographed wet and dry.
	<i>The total length and percentage of the relevant intersections logged.</i>	All RC chips and DD core has been geologically logged.
Subsampling techniques and sample	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Core is longitudinally cut in half with a core saw. HQ and NQ2 sized diamond core are considered a representative sample of the insitu material.

<i>preparation</i>	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	RC samples were taken in slightly different ways over the course of the various drilling programmes. Kagara generally used a spear to take samples from large plastic bags which collected material from a cyclone over 1 m intervals. Auctus collected RC chip samples from a three-stage splitter (7:1) mounted beneath the cyclone. Samples were collected in large green UV resistant plastic bags for the 7/8 split and smaller calico tie bags for the 1/8 split. The smaller calico bags were generally sent for assay. When occasional wet samples were delivered, drilling was often halted if contamination was noticed, to clean the cyclone and splitter. If the hole was making large volumes of water, and delivery of dry sample was not possible, RC drilling was stopped, and a change was made to core.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Sampling intervals are selected by a geologist and a drill hole sampling sheet is completed. Samples are usually one metre in length and are only sampled to geological contacts occasionally. All core is cut in half using a core saw. Half core samples are placed in calico bags which are then inserted into polyweave sacks. Polyweave sacks are then transported to the laboratory. All samples are subjected to industry standard sample preparation regimes: <ul style="list-style-type: none"> • Kagara – sample preparation involved drying, crushing to 5–6 mm and, if necessary, riffle splitting this material to about 2.5 to 3 kg. The sample was then pulverised in an LM5 bowl pulverizer, such that >85% of the sample was –75 microns, before scooping out a 200 g pulp for analytical determinations. • Auctus – sample preparation involved drying and crushing the entire sample such that >70% is –6 mm. The sample was then riffle split to reduce size to ca. 2 to 3kg and then pulverised in an LM5 bowl pulverizer (targeting >85% passing 75 µm), before scooping out a 250–300g pulp for analytical determinations.
	<i>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</i>	Quality control (QC) samples included certified reference materials (CRMs), field duplicates, pulp duplicates and check assays (of sample pulps from both Kagara and Auctus drilling). RC field duplicate data was only available for the Auctus drilling campaigns. CRM data was available for both Kagara and Auctus drilling campaigns.
	<i>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.</i>	An extensive field duplicate sampling program was completed to support this Mineral Resource estimate – refer QC section.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes are considered to be appropriate to the grain size of the material being sampled.

Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	<p>The assaying and laboratory procedures used are consistent with industry good practise. The methodology employed for the main elements of interest are broadly summarised below.</p> <ul style="list-style-type: none"> Kagara: First-pass analyses on all samples were conducted for Cu, Pb, Zn, Ag, As, Mo, Bi, Ni, Cr by method ICP21R (perchloric acid digest, ICP-OES finish). All samples were analysed for Au by fire assay Method FAA505, with lead collection from a 50 g charge, acid digest and AAS finish (detection limit 0.01 ppm). Auctus: First-pass analyses on all samples comprised a comprehensive 33-element suite by method ME-ICP61, a four-acid digest with ICP-AES finish. All samples were analysed for Au by fire assay Method AA25, with lead collection from a 30 g charge, an initial HNO3 digestion to remove Ag and then HCl is added (effectively making it an aqua regia digest) with an AAS finish (detection limit 0.01 ppm).
	<i>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.</i>	No geophysical tools were used in the preparation of the Mineral Resource estimate.
	<i>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.</i>	<p>QC samples were inserted by Kagara and Auctus. The QC samples that have been collected are summarised below:</p> <ul style="list-style-type: none"> CRMs were generally inserted at a rate of 1 in 10 samples through both Kagara and Auctus drilling campaigns. Field duplicate samples were taken during RC sampling programmes completed by Auctus. Auctus submitted 28 sample pulps in 2017 to SGS Townsville for check analysis. Auctus submitted approximately 350 additional pulps to Intertek in 2018 for check analysis, including both Kagara and Auctus samples. <p>Following review of all QC data, and inspection of data collection procedures, the Competent Person considered that sufficient confidence can be placed in the dataset to support reporting a Mineral Resource estimate in accordance with the JORC Code.</p>
Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	<p>All mineralisation intersections, both significant and anomalous are verified by site personnel during the drill hole validation process.</p> <p>Assay results are received in csv format and loaded into the database.</p> <p>The Competent Person from CSA Global also verified the some of the significant intersections during the site visit that was completed in 2018.</p>
	<i>The use of twinned holes.</i>	No twinning has been completed.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Templates have been set up to facilitate geological logging. Prior to the import into the central database, logging data is validated for conformity and overall systematic compliance by the geologist.
	<i>Discuss any adjustment to assay data.</i>	No adjustments were made to the analytical data, other than replacing below detection results with a value equal to half the detection limit or zero.

Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	<p>All drill hole collar locations were surveyed to a high accuracy with either RTK GPS or total station equipment.</p> <ul style="list-style-type: none"> Kagara – either ER Single Shot, Reflex EZ Shot, Eastman single-shot or multi-shot digital Ranger Explorer survey tool were generally used at a nominal interval of 30 m. Due to the amount of magnetite and pyrrhotite in the target zones, and the high sensitivity of modern digital cameras to magnetic fields, azimuth readings often proved to be unreliable. According to Kagara, a judgment call was made by the supervising geologist as to whether the azimuth was reliable and if not, when reliable surveys were finally obtained further downhole, azimuths were adjusted pro-rata back up the hole. Auctus – The camera was a digital single shot Camtek survey tool in the first stage of drilling (holes 1233 to 1270) and a Reflex EZ-Trac thereafter. Otherwise the procedures were very similar to those adopted by Kagara, including the use of “dummy” surveys were used where suspect magnetic readings were encountered. From 7 March 2018, it was decided to conduct down hole surveys with a Reflex north seeking gyroscopic tool (Gyro EG0137) as part of routine down hole surveying. The tool was being used concurrently on drill holes in the Mine Corridor and was subject to availability. A total of 16 holes for 316 points were surveyed (#1314, then 1346 and onwards), 15 of which included the collar surveys.
	Specification of the grid system used.	Data is based on MGA Zone 55 and converted to a mine grid.
	Quality and adequacy of topographic control.	A topographic surface was provided by Auctus in local grid coordinates in Surpac digital terrain model (DTM) format. The topographic surface matched the drill hole collar positions.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	The drill spacing varies along strike and down dip. The drill hole density is denser than 25 m by 25 m in some areas, extending out to 50-80 m by 50-80 m in less drilled areas.
	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.	The Competent Person believes the mineralised lenses have sufficient geological and grade continuity to support the classification applied to the Mineral Resources given the current drill pattern.
	Whether sample compositing has been applied.	Sample compositing was applied for some of the Kagara drilling, whereby 1 m samples were speared and combined with adjacent samples to form 2 to 4 m composites. This represents as small portion of the total dataset.
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.	<p>The data spacing is somewhat irregular, however an effort has been made drill holes as close as possible to orthogonal to the lodes.</p> <p>The Competent Person considers that the orientation of the sampling is unlikely to have caused biased sampling.</p>
	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.	No bias based on hole orientation is known to exist.

<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	<p>Chain of custody has been managed by Kagara and Auctus.</p> <p>Core is collected daily from the rig and transported to the core yard, where it is laid on racks for logging and sampling. All core is photographed when marked up for a permanent record.</p> <p>RC samples are collected at the rig and transport to the core processing facility.</p> <p>On completion of logging, RC and DD samples are tied and bagged for transport to Townsville by commercial courier.</p> <p>Assay results are currently received from the laboratory in digital format. Once data is finalised it is transferred to a Microsoft Access database.</p>
<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No external audit of sampling techniques and data has been undertaken.

Section 2 – Key Classification Criteria

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<i>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.</i>	The Victoria prospect is located on EPM 25873, which is held by Atherton Resources Ltd (Atherton). Atherton was acquired by Auctus via one of its subsidiaries in December 2015. The tenement was granted on 20 August 2015 with a term of five years. The EMP was granted on 20 August 2015 for a period of five years.
	<i>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.</i>	No impediments are known to exist.
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<p>Prior to 2005, much of the drilling by previous explorers, including Elders, Niugini Mining, Noble Resources, Goldfields and Australian Geophysics, had focused on potential extensions to the old mine workings along the Red Cap Thrust (Red Cap, Queenslander, Morrison) and other occurrences (Penzance, Camborne and Belgravia).</p> <p>Only limited drilling was completed at Victoria prior to 2005, and this data has been excluded from the database prior to Mineral Resource estimation for to uncertainties with the data.</p> <p>Mapping of the Red Cap area and Victoria in particular, was undertaken by Niugini Mining (Georgees 2006) in 1996 (J. Nethery pers. comm.) on a tape and compass grid, with local north oriented ~337° MGA (calculated by Auctus) or ~67° west of MCOR north (043°MGA). Kagara checked the mapping and found it to be accurate.</p> <p>Some surface trenching has been undertaken at Victoria, however the timing of this work is not known.</p>

Geology	Deposit type, geological setting and style of mineralisation.	<p>A variety of geological settings are present at the various deposits which constitute the Red Cap group.</p> <p>The northern most line of workings (Red Cap, Queenslander, and Morrisons) extend well over 1 km and are all associated with a major shear/breccia development within a skarn altered contact position along the Red Cap Fault on the south-western side of the Red Cap Volcanics suite. The workings generally dip to the south-west and several small operations between the late 19th century and the 1930s extracted minor tonnages of secondary enriched copper and lead ores.</p> <p>The Victoria line, centrally located in the area, is developed along a shear/contact between a limestone hangingwall and a sandstone footwall. Several sphalerite-rich lode structures (Victoria Main and Victoria South) exist at Victoria.</p> <p>A skarn mineral assemblage including pyroxene-garnet-magnetite-pyrrhotite is present, along with sphalerite and chalcopyrite. The system is strongly zoned. Within the Main Victoria Zone, higher grade Zn transitions to higher grade Cu in the northeast. Furthermore, vertically from approximately 250 m below surface, base-metal mineralization gradually transitions to sphalerite-poor gold and chalcopyrite mineralization in the pyroxene-garnet skarn. The base of oxidation is quite shallow (<30 m) at Victoria, deepening to about 50 m near the centre of the deposit.</p> <p>The limestone unit hosting the Victoria mineralization varies in thickness from less than 1 m to over 80 m, with an average thickness of approximately 30-40 m in the central deposit area. At its southwestern contact with another siltstone unit, there is a pyroxene-garnet skarn zone which hosts another lens of mainly chalcopyrite and sphalerite mineralization. This mineralisation has been termed the Victoria South Zone.</p> <p>Magnetite and pyrrhotite are less abundant in this zone.</p>																																																								
Drill hole information	<p>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:</p> <ul style="list-style-type: none">• Easting and northing of the drill hole collar• Elevation or RL (Reduced Level – Elevation above sea level in metres) of the drill hole collar• Dip and azimuth of the hole• Downhole length and interception depth• Hole length.	<p>The Victoria/Morrison Deeps database comprises 167 holes for 36,751 m, comprising 11,774 m of RC drilling and 24,977 m of diamond drilling. The vast majority of drilling that supports this Mineral Resource estimate was completed by Kagara and Auctus from 2005 through 2018.</p> <table><tr><th>Owner</th><th>Year</th><th>Holes series</th><th>No. of holes</th><th>RC metres</th><th>DD metres</th><th>Total metres</th></tr><tr><td>Australian Geophysical Pty Ltd</td><td>1967</td><td>RC1, RC2, RC9</td><td>3</td><td></td><td>524.12</td><td>524.12</td></tr><tr><td>Western Mining Corporation</td><td>1978</td><td>RD103</td><td>1</td><td></td><td>214.7</td><td>214.7</td></tr><tr><td>Kagara</td><td>2005</td><td>896–906</td><td>11</td><td>927.0</td><td></td><td>927.0</td></tr><tr><td>Kagara</td><td>2007–2008</td><td>946–981</td><td>35</td><td>3,159.8</td><td>11,812.4</td><td>14,972.2</td></tr><tr><td>Kagara</td><td>2011–2012</td><td>1089–1226</td><td>30</td><td>764.7</td><td>8,874.7</td><td>9,639.4</td></tr><tr><td>Auctus</td><td>2017–2018</td><td>1233–1362</td><td>87</td><td>6,922.6</td><td>3,551.4</td><td>10,474.0</td></tr><tr><td colspan="3">Total</td><td>167</td><td>11,774.1</td><td>24,977.32</td><td>36,751.42</td></tr></table>	Owner	Year	Holes series	No. of holes	RC metres	DD metres	Total metres	Australian Geophysical Pty Ltd	1967	RC1, RC2, RC9	3		524.12	524.12	Western Mining Corporation	1978	RD103	1		214.7	214.7	Kagara	2005	896–906	11	927.0		927.0	Kagara	2007–2008	946–981	35	3,159.8	11,812.4	14,972.2	Kagara	2011–2012	1089–1226	30	764.7	8,874.7	9,639.4	Auctus	2017–2018	1233–1362	87	6,922.6	3,551.4	10,474.0	Total			167	11,774.1	24,977.32	36,751.42
Owner	Year	Holes series	No. of holes	RC metres	DD metres	Total metres																																																				
Australian Geophysical Pty Ltd	1967	RC1, RC2, RC9	3		524.12	524.12																																																				
Western Mining Corporation	1978	RD103	1		214.7	214.7																																																				
Kagara	2005	896–906	11	927.0		927.0																																																				
Kagara	2007–2008	946–981	35	3,159.8	11,812.4	14,972.2																																																				
Kagara	2011–2012	1089–1226	30	764.7	8,874.7	9,639.4																																																				
Auctus	2017–2018	1233–1362	87	6,922.6	3,551.4	10,474.0																																																				
Total			167	11,774.1	24,977.32	36,751.42																																																				

	<i>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.</i>	A summary of the drilling that supports the Mineral Resource estimate is provided above. Specific details regarding drill hole collar locations, hole dips/azimuths, downhole lengths and intersection depths, and hole lengths have not been provided on the basis that this information is not material to understanding the Mineral Resource estimate reported herein.																											
<i>Data aggregation methods</i>	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades)</i>	This table has been prepared to support the public release of a Mineral Resource estimate. In this announcement, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades were not used and Exploration Results have not been reported.																											
	<i>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.</i>	This table has been prepared to support the public release of a Mineral Resource estimate. In this announcement, aggregate intercepts were not used and Exploration Results have not been reported.																											
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	<p>Metal equivalent values have not been used with regard to Exploration Result reporting.</p> <p>In order to account for the polymetallic nature of the deposit when reporting the Mineral Resource, a metal equivalent formula was calculated so that the contribution from each metal was considered when reporting the Mineral Resource.</p> <p>The parameters used to calculate the metal equivalent value are shown below.</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th><th>Unit</th></tr> </thead> <tbody> <tr> <td>Zn price</td><td>2,825</td><td>US\$/t</td></tr> <tr> <td>Cu price</td><td>6,925</td><td>US\$/t</td></tr> <tr> <td>Au price</td><td>1,303</td><td>US\$/oz</td></tr> <tr> <td>Ag price</td><td>17.3</td><td>US\$/oz</td></tr> <tr> <td>Zn recovery</td><td>96</td><td>%</td></tr> <tr> <td>Cu recovery</td><td>95</td><td>%</td></tr> <tr> <td>Au recovery</td><td>55</td><td>%</td></tr> <tr> <td>Ag recovery</td><td>50</td><td>%</td></tr> </tbody> </table> <p>The formula below was used to calculate zinc equivalent:</p> $ZnEq = [(Au \text{ grade} \times Au \text{ price} \times Au \text{ recov} / 31.1) + (Ag \text{ grade} \times Ag \text{ price} \times Ag \text{ recov} / 31.1) + (Zn \text{ grade} \times Zn \text{ price} \times Zn \text{ recov} / 100) + (Cu \text{ grade} \times Cu \text{ price} \times Cu \text{ recov} / 100)] / (Zn \text{ price} \times Zn \text{ recov} / 100)$ <p>Metallurgical testwork that has been completed to date at Victoria is preliminary in nature; however, supports the assumptions made. Commodity prices were provided based on 2019 consensus forecasts.</p>	Parameter	Value	Unit	Zn price	2,825	US\$/t	Cu price	6,925	US\$/t	Au price	1,303	US\$/oz	Ag price	17.3	US\$/oz	Zn recovery	96	%	Cu recovery	95	%	Au recovery	55	%	Ag recovery	50	%
Parameter	Value	Unit																											
Zn price	2,825	US\$/t																											
Cu price	6,925	US\$/t																											
Au price	1,303	US\$/oz																											
Ag price	17.3	US\$/oz																											
Zn recovery	96	%																											
Cu recovery	95	%																											
Au recovery	55	%																											
Ag recovery	50	%																											

<i>Relationship between mineralisation widths and intercept lengths</i>	<i>These relationships are particularly important in the reporting of Exploration Results.</i>	The data spacing is irregular, but overall averages 20 m to 50 m spacings (along strike and down dip) over the area modelled. Holes have been drilled at various dips and azimuths and therefore intersect the lodes at variable angles. An attempt has been made to drill holes as close as possible to orthogonal to the lodes; however, some holes are oblique to the trend of the mineralisation.
	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	In preparing the mineralisation models which define the limits to the Mineral Resource reported herein, the true widths of the mineralisation are honored.
	<i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. "downhole length, true width not known").</i>	Drill hole intercept lengths are not reported in this announcement.
<i>Diagrams</i>	<i>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 drillhole collar locations and appropriate sectional views.</i>	Relevant maps and diagrams are included in the body of the report.
<i>Balanced reporting</i>	<i>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.</i>	Exploration Results (drill hole intersections) have informed the Mineral Resource estimate. Summary details relating to this drilling is provided under "Drillhole Information". The Competent Person visited site from 26 September to 27 September 2019 and inspected significant intersections from several holes. Numerous holes were inspected during the site visit including 1247, 1358, 1352W1, 1316 and 1320. The style of mineralisation varied significantly within and between the holes. While only a limited dataset was observed (compared to the total holes drilled), it was evident that there were both high-grade zones of massive to semi-massive sphalerite, with associated pyrrhotite and chalcopyrite, and low-grade zones associated with stringer and disseminated sulphide mineralisation styles. The mineralisation was hosted within an overall skarn unit, which varies in thickness.
<i>Other substantive exploration data</i>	<i>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</i>	No substantive exploration data exists that has not been mentioned elsewhere in this table.

Further work	<i>The nature and scale of planned further work (e.g. 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.</i>	A detailed metallurgical test work program is underway, with results expected shortly. Preliminary economic assessment will be completed in the near future.
--------------	---	--

Section 3 – Key Classification Criteria

Criteria	JORC Code explanation	Commentary
Database integrity	<i>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.</i>	Core logging is completed at the site core yard using project-specific logging codes. Data is then loaded directly into the site database. Assay results are currently received from the laboratory in digital format. Once data is finalised it is transferred to a Microsoft Access database.
	<i>Data validation procedures used.</i>	CSA Global checked the drill hole files for the following errors prior to Mineral Resource estimation: <ul style="list-style-type: none"> • Absent collar data • Multiple collar entries • Questionable downhole survey results • Absent survey data • Overlapping intervals • Negative sample lengths • Sample intervals which extended beyond the hole depth defined in the collar table.
Site visits	<i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i>	Aaron Meakin, Competent Person for the Mineral Resource estimate, completed a site visit from 26 September through 27 September 2018. During the site visit, the following was completed: <ul style="list-style-type: none"> • Inspection of several diamond drill holes from the Victoria prospect • Inspection of sample processing facilities • Inspection of Victoria prospect site • Numerous discussions were held with geologists Ian Hodgkinson, Peter Buckle and Craig Winter to understand the geology of the deposit and drilling history at Victoria. The core shed appeared to be relatively clean and well-organised, and related procedures were being followed. Data collection systems were found to be consistent with industry good practice. Furthermore, geological controls to the mineralisation were sufficiently understood to enable a Mineral Resource to be reported in accordance with the JORC Code.
	<i>If no site visits have been undertaken indicate why this is the case.</i>	Not applicable.

<i>Geological interpretation</i>	<i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i>	Mineralisation interpretation was completed by CSA Global. Preliminary statistical analysis was completed to assess if a cut-off grade could be used to define boundaries to the mineralisation (the mineralisation indicator grade). Following statistical analysis, a decision was made to use 1% Zn+Cu to define the boundaries to the base metal dominant mineralisation zones, and 1 g/t Au to define the boundaries to the gold dominant mineralisation zones.
	<i>Nature of the data used and of any assumptions made.</i>	No material assumptions have been made which effects the Mineral Resource estimate reported herein.
	<i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i>	Alternative interpretations are not likely to materially impact on the global Mineral Resource estimate. It is likely that a greater understanding of the geometry of the high-grade zones will be developed over time. This may lead to separate domaining and alternative interpretation of this material in the future.
	<i>The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.</i>	The main controls to the mineralisation are structural, and mineralisation occurs as a series of lenses. The structural framework was used to guide mineralisation interpretation.
<i>Dimensions</i>	<i>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.</i>	The Victoria and Morrison Deeps deposit constitutes seven lenses (5 for Victoria and two for Morrison Deeps) that have been modelled between 81,500 m N and 82,850 m N. The dip extent extends from 1,150 m RL to -450 m RL. The lenses have variable strike and dip continuity. The width of the individual lodes ranges from 2 m to 10 m, averaging 6 m. The overall lateral width of the mineralised skarn, including internal waste, ranges from 6 m to 50 m, averaging approximately 25 m.
<i>Estimation and modelling techniques</i>	<i>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.</i>	Quantitative kriging neighbourhood analysis (QKNA) was undertaken to assess the effect of changing key kriging neighbourhood parameters on block grade estimates. The main lode within each deposit grouping was subject to QKNA. Kriging efficiency and slope of regression were determined for a range of block sizes, minimum/maximum samples, search dimensions and discretisation grids. A three-pass search ellipse strategy was adopted whereby search ellipses were progressively increased if search criteria could not select sufficient data for the block estimate. The primary and secondary search ellipse dimensions represent 100% and 200 % of the variogram range respectively. The tertiary dimensions represent a range of 800 m for the major direction, with the applicable variogram ratios applied for the semi-major and minor ranges. Ordinary kriging was adopted to interpolate grades into cells. Statistical analysis was completed using Supervisor and Isatis software. All geological modelling and grade estimation were completed using Surpac software.

	<p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></p>	<p>Kagara published an Inferred Mineral Resource for Victoria in 2008 totalling 3.44 Mt @ 5.1% Zn, 1.0% Cu and 22g/t Ag. An Inferred Mineral Resource of 1.62Mt @ 0.6g/t Au and 0.3% Cu was reported for a Au-Cu lode at depth, contiguous with the base metal lenses.</p> <p>The 2008 Mineral Resource was calculated by polygonal methods; hence a detailed comparison was not possible. The 2018 VMZ MRE of 4.3 Mt @ 3.1% Zn, 0.8% Cu, 21 g/t Ag and 0.2 g/t Au is higher in tonnage, lower in Zn grade, lower in Cu grade, and approximately equivalent in Ag grade to the 2008 estimate. Given that the 2008 estimate was essentially a 2D exercise, and significant drilling was completed in 2017 and 2018, the 2018 MRE is considered to provide a more realistic inventory of the mineralisation at Victoria.</p> <p>No Mineral Resource has been previously reported for Morrison Deepes.</p>
	<p><i>The assumptions made regarding recovery of by-products.</i></p>	<p>No assumptions have been made regarding recovery of by-products.</p>
	<p><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></p>	<p>Bi, Cd, Fe, S, Sb and As were estimated in addition to the potentially economic elements Zn, Au, Pb, Cu and Ag.</p>
	<p><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></p>	<p>A 10 m E by 5 m N by 10 m RL parent cell size was used with sub-celling to 2.5 m E by 1.25 m N by 2.5 m RL to honour wireframe boundaries. The drill hole data spacing is highly variable but approximates 25 m to 50 m along strike (north-south) by 25 m to 50 m down-dip. The block size represents approximately half of the drill spacing in the more densely drilled areas of the deposit.</p>
	<p><i>Any assumptions behind modelling of selective mining units.</i></p>	<p>No assumptions were made regarding selective mining units.</p>
	<p><i>Any assumptions about correlation between variables</i></p>	<p>No assumptions have been made regarding correlation between variables.</p>
	<p><i>Description of how the geological interpretation was used to control the resource estimates.</i></p>	<p>The main controls to the mineralisation are structural. Mineralisation occurs as a series of lenses which strike east-west and dip steeply south.</p>
	<p><i>Discussion of basis for using or not using grade cutting or capping.</i></p>	<p>The requirement for top-cuts was reviewed given the potential for extreme grades to bias block grade estimation. For each variable in each statistical domain, histograms and log-probability plots were reviewed to determine the point at which the number of samples supporting a high-grade distribution diminishes. Mean-variance plots were then reviewed to determine if potential outliers were significant contributors to the mean and variance, while themselves representing insignificant proportions of the total datasets.</p>
	<p><i>The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.</i></p>	<p>Drillhole grades were initially visually compared with cell model grades. Domain drill hole and block model statistics were then compared. Swath plots were also created to compare drillhole grades with block model grades for easting, northing and elevation slices throughout the deposit. The block model reflected the tenor of the grades in the drill hole samples both globally and locally.</p>

<i>Moisture</i>	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i>	Tonnages are estimated on a dry basis.
<i>Cut-off parameters</i>	<i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i>	The Mineral Resource reported above a cut-off grade of 3% ZnEq. This grade represents the cut-off grade for low-grade ore at the nearby King Vol Mine.
<i>Mining factors or assumptions</i>	<i>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.</i>	In selecting the reporting cut-off grade, the mining method has been considered. Victoria is an underground mining proposition, mainly due to the close proximity to a creek.
<i>Metallurgical factors or assumptions</i>	<i>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.</i>	Mungana operates a conventional floatation circuit. Mungana has a long history of producing and selling a concentrate by flotation methods with no material issues with deleterious elements.
<i>Environmental factors or assumptions</i>	<i>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.</i>	It is assumed that there will be no significant environmental impediments to developing the project. This is an early stage project and potential environmental impacts require review.

Bulk density	<p><i>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.</i></p>	<p><u>Victoria</u></p> <p>A different approach was adopted for oxide/transitional and fresh material.</p> <p>Oxide / Transitional</p> <p>An average density of 2.9 g/cm³ was assigned to the oxide material based on limited pycnometer measurements outside the mineralised zone. Transitional was assigned a value of 3.3 g/cm³ (midway between the mean fresh and oxide value). These values require validation in the future. This has been considered when classifying the Mineral Resource estimate. Oxide and transitional material are classified as Inferred.</p> <p>Fresh</p> <p>A total of 433 density measurements were within the mineralisation wireframes. This included 131 pycnometer measurements and 302 Archimedes measurements. The mean pycnometer measurement was 3.78 g/cm³ and the mean Archimedes measurement was 3.66 g/cm³.</p> <p>Pycnometer data</p> <p>CSA Global merged the Archimedes density data with the assay data within the mineralisation envelope to understand the correlation between Fe, S, Zn and Cu and density. A moderate positive correlation existed between Fe and density.</p> <p>CSA Global considered that assigning a mean value to the fresh material based on the Archimedes density results would underestimate the local tonnage variability of the deposit. CSA Global also decided that directly interpolating density values was also not appropriate, given clustering of the data within the mineralisation envelope. It was therefore decided to use a regression formula based on the interpolated Fe results to calculate density values in the block model. Where no Fe values were available, the weighted average density value was calculated based on the lithologies present in the mineralisation envelope.</p> <p>The following formula was applied:</p> <p>Density = 0.059 x Fe + 2.858 (Fe < 10%)</p> <p>Density = 0.014 x Fe + 3.363 (Fe >= 10%).</p> <p><u>Morrison Deeps</u></p> <p>No Fe grades existed for holes in the Morrison Deeps lodes, preventing density to be calculated by the regression. Therefore, a length-weighted average density was assigned to each Morrison Deeps lode based on the average density of similar lithologies at Victoria. A value of 3.62 g/cm³ was applied to one lode and 3.84 g/cm³ to the other.</p>
	<p><i>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.</i></p>	<p>The Archimedes method measurements were determined by measuring the weight of part or the entire sample in air and water and then applying the formula bulk density = weight_{air}/(weight_{air}-weight_{water}). Samples of drill core that contain 'holes' or 'vughs', are very porous, crumbly and incompetent or clay rich are sealed with a masonry sealant/wax and allowed to dry prior to bulk density determination.</p>

	<i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i>	After considering the results of the above analysis, it was clear that there was a reasonable amount of Archimedes density data in the fresh material within the modelled mineralisation envelope at Victoria, while there was none in the transitional and oxide zones. It was also clear that the density varied significantly within the mineralised zone in the fresh material depending on the lithology/mineralogy. The approach adopted is considered reasonable for both Victoria and Morrison Deeps given the data available.
Classification	<i>The basis for the classification of the Mineral Resources into varying confidence categories.</i>	The Mineral Resource has been classified following due consideration of all criteria contained in Section 1, Section 2 and Section 3 of JORC 2012 Table 1. After considering data quality and geological continuity, grade estimation quality was assessed. The block model was initially coloured by SOR. Drill hole composites were then loaded to gain an understanding of how SOR related to drill hole spacing. SOR values of >0.5 were found to relate to a drill hole spacing of denser than approximately 30 m E by 30 m RL. The Competent Person classified areas as Indicated where the drill hole spacing was denser than 30 m by 305 m. All other modelled areas were classified as Inferred. The drill hole spacing in these areas is 25–75 m by 25–75 m. Only continuous areas were classified to avoid the “spotted dog effect”.
	<i>Whether appropriate account has been taken of all relevant factors (i.e. 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).</i>	Appropriate account has been taken of all relevant criteria including data integrity, data quantity, geological continuity, and grade continuity.
	<i>Whether the result appropriately reflects the Competent Person’s view of the deposit.</i>	The Mineral Resource estimate appropriately reflects the Competent Person’s views of the deposit.
Audits or reviews	<i>The results of any audits or reviews of Mineral Resource estimates.</i>	The current model has not been audited by an independent third party but has been subject to CSA Global’s internal peer review processes.
Discussion of relative accuracy/ confidence	<i>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.</i>	The Mineral Resource accuracy is communicated through the classification assigned to this Mineral Resource. The Mineral Resource estimate has been classified in accordance with the JORC Code, 2012 Edition using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table.
	<i>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.</i>	The Mineral Resource statement relates to a global tonnage and grade estimate. Grade estimates have been made for each block in the block model.

	<i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i>	No production data is available.
--	---	----------------------------------