

# **ASX Announcement 1 November 2021**

# **Shallow Copper Intercepts Highlight New CZ Extension**

- New, shallow, high-grade 'oxide-copper' zone intersected by three RC drill holes around the Company's CZ Mineral Resource<sup>1</sup>
- Oxide copper zone extends for over 100 metres (m) and is open to the southeast
- Results include:
  - 7m at 2.64% copper (Cu) & 1.18 g/t gold (Au) within 25m at 0.94% Cu from 20m
  - 7m at 2.83% Cu within 30m at 0.86% Cu from 14m
  - 3m at 2.74% Cu within 8m at 1.17% Cu from 32m (refer Table 1 for details)
- Follow-up drilling planned to better define this zone

Helix Resources Limited (**ASX: HLX**) ("Helix" or "the Company") is pleased to provide an update on the Company's copper exploration activities on its wholly owned tenements along the Collerina Copper Trend, located in the prolific copper-endowed Cobar region of NSW (refer Figure 4 Location Plan).

Reverse-circulation (RC) drilling targeting shallow, oxide-copper mineralisation around the Company's CZ Mineral Resource intersected thick zones of copper mineralisation, some of which include gold. This is a new zone, defined by three drill holes over a 100m span and is open to the southeast.

The term 'oxide' refers to copper (and gold) mineralisation which has been remobilised and concentrated within the weathering profile. The minerals generally comprise the distinctive green (malachite) and blue (azurite) hydroxide copper minerals as well as a friable form of a high-tenor copper mineral – chalcocite with traces of native copper. The presence of chalcocite creates opportunities for Helix to extend the oxide mineralised zones where historical drilling was not sampled.

#### Commenting on the copper assays, Helix Managing Director Mike Rosenstreich said:

"We are approaching our drilling campaigns with an open-mind in terms of the geological controls on the mineralisation and succeeding in identifying new extensions to the known mineralised outlines.

Three solid hits! Each shallow, with excellent copper grades – peak assay of 16% copper, and some associated with gold. There is scale potential to this with over 100 metres defined to date and the zone is open to the southeast.

This is very encouraging for increasing our existing shallow oxide Mineral Resource estimate for CZ<sup>1</sup>. We are planning quick follow-up drilling to better define this zone. A significant number of historical RC holes in this area were not logged geologically and were "under-sampled"; hence our "open-minded' approach to what we aim the drill rig at, and optimism on being able to further extend this shallow oxide zone. We continue drilling and eagerly await a significant flow of assay results."

<sup>&</sup>lt;sup>1</sup> Refer Appendix 1 for details.



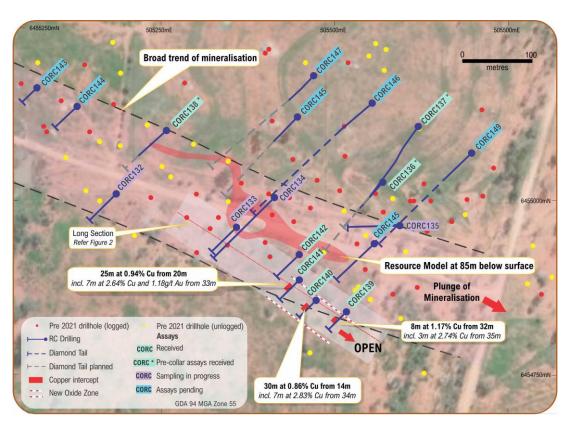


Figure 1: CZ Deposit Drill Hole Location Plana

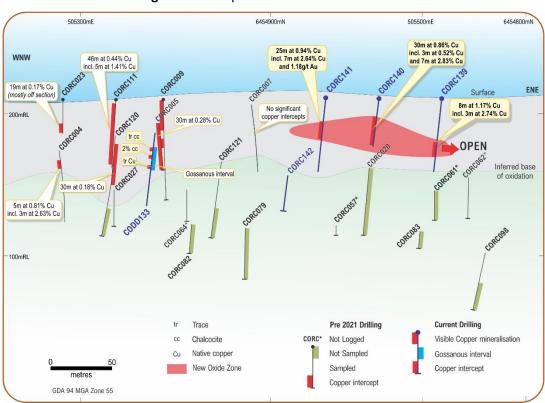


Figure 2: CZ Deposit New Oxide Zone Long Section<sup>b</sup>

**Note a & b:** Information relevant to pre-2021 drill intercepts can be found in ASX releases dated; 11 June 2019, *Interim Maiden Resource at Collerina Copper Project,* 25 November 2020, *Collerina copper drilling recommences,* 21 January 2021, *Copper Exploration Update and* 15 February 2021, *NSW Projects Exploration Update.* 



#### **TECHNICAL REPORT**

This report presents assay results for seven reverse circulation (RC) drill holes forming part of a drilling program currently underway at the CZ Deposit<sup>2</sup>, on the Collerina Trend. This CZ drilling program comprises a mixture of RC and diamond core to test for copper resource extensions and improved resource definition. In addition, four diamond core holes have been completed for metallurgical test work.

#### **Resource Extension Drilling**

RC drilling was recently completed testing for extensions of the existing oxide copper Mineral Resource<sup>2</sup>, as well as providing pre-collars for diamond core drilling to test extensions of primary sulphide copper mineralisation at depth.

Fourteen holes (CORC0136 to CORC0149), comprising 1,318.6m of RC and 550m of diamond core tails have been completed to date. Seven RC holes targeted shallow oxide resources and the remaining holes are targeting primary sulphide mineralisation with pre-collared diamond holes. Sampling of the RC holes has been completed and logging of the diamond tails is in progress.

Results have been received for four RC holes that targeted oxide resources. Significant copper intercepts have been returned in three of those holes, as shown in Table 1. A significant gold intercept was also returned in hole CORC0141 (Table 1).

These intercepts have defined a new zone of copper oxide mineralisation over 100m of strike length outside of the existing resource shell, which remains open to the southeast (Figure 2).

| Hole ID  | 0.1% Cut-off                | 0.5% Cut-off            | 1% Cut-off                   |  |
|----------|-----------------------------|-------------------------|------------------------------|--|
| CORC0139 | 8m @ 1.17% Cu from 32m      | -                       | 3m @ 2.74% Cu from 35m       |  |
|          | 2m @ 0.11% Cu from 5m       | -                       | -                            |  |
| CODC0140 | 30m @ 0.86% Cu from 14m     | 3m @ 0.52% Cu from 17m  | 1m @ 16% Cu & 1.3g/t Au from |  |
| CORC0140 |                             | 7m @ 2.83% Cu from 34m  | 34m                          |  |
|          | 2m @ 0.12% Cu from 47m      | -                       | -                            |  |
|          | 25m @ 0.94% Cu from 20m     | 7m @ 2.64% Cu & 1.18g/t | 6m @ 2.95% Cu & 1.36g/t Au   |  |
| CORC0141 | 25m @ 0.94% Cu from 20m     | Au from 33m             | from 34m                     |  |
|          | 18m @ 0.17% Cu from 47m     | -                       | -                            |  |
| CORC0142 | No significant intersection |                         |                              |  |

Table 1: Copper intercepts in CODD0139 to CODD0141 t a range of cut-off grades<sup>3</sup>

The term 'oxide resources' refers to the weathered, generally shallow portions of the primary copper-sulphide mineralisation. This weathering involves low-temperature chemical reactions associated with the percolation of ground water over thousands to millions of years. As water tables rise and fall, and as specific chemical conditions change between oxidising and reducing environments, a zonation of copper mineral species occurs.

The distribution of these minerals is also controlled by the footprint of the primary copper mineralisation and the permeability of the rock through which the ground water percolates. Within the shallow, weathered horizon, Helix geologists have observed in the drill chips predominantly, malachite ( $Cu_2(OH)_2(CO_3)_2$  (green)) and azurite ( $Cu_3(OH)_2(CO_3)_2$  blue)) as well as chalcocite ( $Cu_2S$ , (black)) and native copper ( $Cu_2S$ ).

The copper intercepts are associated with a variable abundance of azurite and malachite, ranging from 0.5% to 3% (visual estimate<sup>4</sup>) in one metre samples. This copper mineralisation is associated with quartz-rich zones and distinct narrow gossan lenses – which are regarded as broken and porous units for water movement. In addition, each of the holes CORC0139 to CORC0141 intersected a narrow zone of chalcocite between 35m and 38m downhole (17.5m to 19m vertical). This is a higher tenor copper mineral species and reflected in the higher copper assays in this zone. Interestingly, the chalcocite is highly friable and puggy, hence, when the geologists sieve and wash (refer Figure 3) the RC chips, much of the chalcocite is washed away and is under-represented in

<sup>&</sup>lt;sup>2</sup> Refer Appendix 1 for details.

<sup>&</sup>lt;sup>3</sup> Cut-off grade based on a maximum of 2m of internal dilution.

<sup>&</sup>lt;sup>4</sup> Refer to cautionary statement page 6 regarding visual estimates of mineral abundance.



the geological logging records. The samples for assaying are not sieved or washed and these copper assays are representative of the contained copper in the one-metre samples. This phenomenon may explain why some shallow zones of historical RC drill holes were not sampled.

Chalcocite was also observed in the PQ diamond core holes, CODD0132 and CODD0133, which were drilled for the metallurgical test work. CODD0133 intersected a 17m down hole interval of interbedded gossanous schist and mica-chlorite schist from 40m. This interval included massive pyrite with trace chalcocite from 40m to 43.5m and up to 2% chalcocite from 46m to 48.4m (visual estimate<sup>4</sup>), associated with gossan and trace native copper from 54m. These intervals are along strike to the northwest of the mineralised intercepts in CORC0139 to CORC0141 (Figure 2).

Further drilling is planned to follow-up these significant results. The remainder of the current drilling program will target deeper primary mineralisation with diamond tails to RC pre-collars. A further 500m to 600m of diamond core tails are planned. Down hole EM surveys (DHEM) will be undertaken on four RC pre-collared diamond core holes (RCDD). The DHEM survey is expected to commence within the next two weeks. An additional two holes are available in the approved 20-drill hole program, and these holes will be designed after further review of ongoing results. Assays for the remaining RC samples are expected in November, with RCDD assays to follow in December. Results have also been received for three RC pre-collars, however no significant results were returned. Collar details for the drill holes and the current hole status are provided in Table 2.



Figure 3 - Copper oxide mineralisation; azurite (blue) and malachite (green) in CORC0140 at 34 metres



#### **Metallurgical Drilling**

Four large diameter (PQ) diamond holes (CODD0132 to CODD0135) for metallurgical test work were drilled for 663.3 metres. The holes were designed to target oxide, transition and sulphide copper mineralisation. Logging and cutting of the core from these holes have been completed and core cutting will be completed shortly. Samples are expected to be submitted to the laboratory in early November and assay results are expected in late November to early December. The metallurgical test work will be conducted in Perth with results expected in the first quarter of 2022.

Drill Total Hole Start **Hole ID** RL **Target DHEM Precollar Easting Northing Azimuth** Type Dip Depth Status CODD0132 DD Metallurgy No 0 505186 6455010 -60 208 225.5 105.7 CODD0133 DD 0 505359 6454963 -60 225.5 100.3 Metallurgy No 210 CODD0134 DD Metallurgy Yes 0 505414 6455007 -60 210 225.5 259.9 CODD0135 DD Metallurgy 0 505594 6454964 -70 210 270.5 197.4 No CORC0136 RCDD Sulphide No 90 505570 6455028 -60 210 225.5 200 CORC0137 **RCDD** Sulphide No 144 505621 6455107 -60 209 225.5 270 CORC0138 **RCDD** Sulphide No 97 505258 6455102 -60 208 225.5 150 CORC0139 RC0 505517 6454840 225.5 Oxide No -60 211 72 CORC0140 RC Oxide No 0 505474 6454857 -60 211 225.5 66 CORC0141 RCOxide No 0 505449 6454886 -60 211 225.5 78 CORC0142 RC Oxide No 0 505450 6454923 -60 211 225.5 90 CORC0143 RC Oxide 0 505071 6455163 205 225.5 58 No -60 CORC0144 RC Oxide No 0 505129 6455137 -60 206 225.5 90 CORC0145 RCOxide No 0 505557 6454938 -60 210 225.5 144

505555

505470

505447

505699

6455142

6455180

6455121

6455068

-60

-60

-60

-60

210

210

210

209

225.5

225.5

225.5

225.5

400

375

300

334.9

Table 2: Drill Hole Details (MGA94 Zone 55)

| Hole Status | : |
|-------------|---|
|-------------|---|

Sulphide

Sulphide

Sulphide

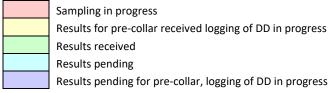
Sulphide

**RCDD** 

**RCDD** 

**RCDD** 

**RCDD** 



Yes

Yes

No

Yes

101.6

102

102

84

#### **Geology Model**

CORC0146

CORC0147

CORC0148

CORC0149

The results from the current drill program will assist with the creation of a geological model for the CZ area. The existing resource model is limited by the absence of a robust geology model, underlined by the lack of geological logging of the previous drill holes. A total of 61 drill holes within the CZ resource area have not been geologically logged, and only 35% of the previous drill metres were sampled. Helix will commence a program of systematically logging these holes to fill the data gaps and build an evidence-based geology model to underpin the next resource model. A key observation from the current geological logging at CZ, is the extensive fault network, and the geometry and kinematics of the faults are poorly constrained. It is probable that these faults will influence the geometry of both the primary and the secondary, 'oxide' copper mineralisation. The building of the geology model is a significant but essential undertaking to better constrain the resource estimates and to optimise regional targeting work. This geological logging and sampling work will continue over the coming months.



#### **CAUTIONARY STATEMENT**

References in this announcement to visual results are from diamond core drilling and RC drilling. Visible oxide mineralisation in PQ core drilling (CODD0132 and CODD0133) consisted of gossan (hematite and goethite) with trace chalcocite, trace copper hydroxides and minor native copper for the intervals. Fresh sulphide mineralisation in PQ core drilling (CODD0134 and CODD0135) consisted of 10% to 90% massive stratiform pyrite with up 5% chalcopyrite and trace sphalerite. Visible oxide mineralisation in RC drilling comprised the copper hydroxide minerals azurite and malachite in variable abundance ranging from 0.5% to 3% in one metre samples for the intervals. Visual estimates of percentages are based on sieved RC chips and therefore may not be representative of the entire sample as gangue minerals may be washed through the sieve. Laboratory assays are required for representative estimates of copper abundance. All RC holes have been sampled in one metre intervals and submitted to the laboratory for analysis. Results have been received for the RC samples in holes CORC0136 to CORC0142. Assays for the remaining RC samples are expected in November, with RCDD assays to follow in December. The PQ diamond core holes are currently being cut into one metre half PQ core samples and will be submitted to the laboratory in November with results expected in in late November to early December. Refer to Table A1 for further details.

#### **COMPETENT PERSON STATEMENT**

The information in this report that relates to exploration results, Mineral Resource estimates and geological data for the Cobar projects is based on information generated and compiled by Mr Gordon Barnes and Mr Mike Rosenstreich who are both employees and shareholders of the Company. Mr Barnes is a Member of the Australian Institute of Geoscientists and Mr Rosenstreich is a Fellow of the Australasian Institute of Mining and Metallurgy. They both have sufficient experience that is relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to each qualify as Competent Person(s) as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Barnes and Mr Rosenstreich have consented to the inclusion of this information in the form and context in which it appears in this report.

#### This ASX release was authorised by the Board of Directors of Helix Resources Ltd.



ABN: 27 009 138 738

ASX: HLX



#### **Contact Details:**

Helix Resources Limited 78 Churchill Avenue, SUBIACO, WA, 6008

PO Box 825 West Perth, WA, 6872

Email: helix@helixresources.com.au
Web: www.helixresources.com.au

Tel: +61 (0)8 9321 2644



#### **Board of Directors:**

Peter Lester Non-Executive Chairman
Tim Kennedy Non-Executive Director
Jason Macdonald Non-Executive Director
Mike Rosenstreich Managing Director

#### **Company Secretary**

Ben Donovan



#### **Investor/Media Contacts:**

Mike Rosenstreich Tel: +61 (0)8 9321 2644

Email: helix@helixresources.com.au

**David Tasker** 

**Chapter One Advisers** 

Email: dtasker@chapteroneadvisors.com.au

Tel: 0433 112 936



#### **APPENDIX 1: Central Zone (CZ) Copper Deposit**

A mineral resource compliant with the 2012 JORC Code for the CZ Deposit is summarised in Table 1 below. It is a high-grade copper discovery made by Helix in late 2016 along the Collerina Trend.

Table 1: Central Zone Mineral Resource Estimate (June 2019) (0.5% Cu Cut-off)

| Classification | Туре                 | Tonnes | Cu  | Au  | Cu     | Au    |
|----------------|----------------------|--------|-----|-----|--------|-------|
|                |                      | Mt     | %   | g/t | t      | OZ    |
| Indicated      | Oxide / Transitional | 0.17   | 1.1 | 0.0 | 1,900  | 200   |
| Inferred       | Oxide / Transitional | 0.46   | 0.6 | 0.0 | 2,700  | 100   |
| Total          | Oxide / Transitional | 0.63   | 0.7 | 0.0 | 4,600  | 300   |
| Indicated      | Fresh                | 0.83   | 2.6 | 0.2 | 21,800 | 6,600 |
| Inferred       | Fresh                | 0.57   | 2.5 | 0.1 | 14,100 | 2,500 |
| Total          | Fresh                | 1.40   | 2.6 | 0.2 | 35,800 | 9,100 |
| Indicated      | Oxide / Transitional | 0.17   | 1.1 | 0.0 | 1,900  | 200   |
| Indicated      | Fresh                | 0.83   | 2.6 | 0.2 | 21,800 | 6,600 |
| Inferred       | Oxide / Transitional | 0.46   | 0.6 | 0.0 | 2,700  | 100   |
| Inferred       | Fresh                | 0.57   | 2.5 | 0.1 | 14,100 | 2,500 |
| Total          | Combined             | 2.03   | 2.0 | 0.3 | 40,400 | 9,400 |

(Rounding errors may occur in summary tables)

Other than results contained in this report, Helix confirms that it is not aware of any new information or data that materially affects the Mineral Resource information included in Helix ASX release dated 11 June 2019, *Interim Maiden Resource at Collerina Copper Project*. All material assumptions and technical parameters underpinning the estimates in that release continue to apply and have not materially changed.

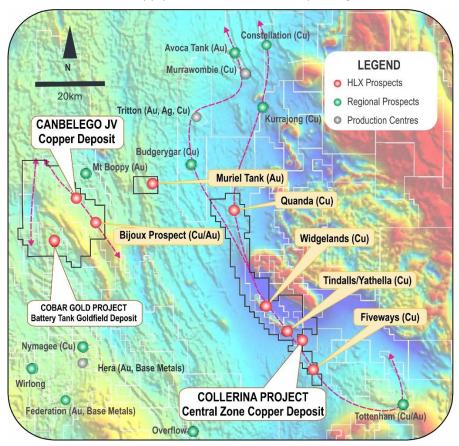


Figure 4: Location Plan -Helix's Cobar region projects



## Table A1 – JORC Code Table

CZ Drilling October 2021

Sampling Techniques and Data

| Criteria               | JORC Code explanation   | Commentary  |
|------------------------|---|---|
| Sampling techniques    | <ul> <li>Nature and quality of sampling (e.g. cut channels, randomchips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sounds, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul> | <ul> <li>Diamond Core Drilling (DD)</li> <li>Commercial drilling contractor Mitchell Services conducted the DD drilling. The holes are orientated approximately S-SW (225-270°) and were drilled with starting dips of between 60-50°.</li> <li>Drill hole locations are determined using a hand-held GPS. Down-hole surveys were conducted using the Reflex multi-shot gyro system.</li> <li>Diamond drill core is sampled at 1m intervals, taking half core at various intervals (=/&lt;1m).</li> <li>The samples were collected and always supervised by Helix staff.</li> <li>The samples were always under the direct control of Helix staff or consultants and are transported to the laboratory by a commercial transport contractor.</li> <li>Reverse Circulation (RC) Drilling</li> <li>Commercial drilling contractor Mitchell Services conducted the RC drilling. The holes are orientated approximately SW (225°) and were drilled with starting dips of 60°.</li> <li>Drill hole locations are determined using a hand-held GPS. Down-hole surveys were conducted using the Reflex multi-shot gyro system.</li> <li>Holes were sampled at 1m intervals via a cyclone directly split into a numbered calico bag with weights typically from 2kg to 4kg for the lab sample, and a large plastic bag for the remaining sample.</li> <li>The lab samples were collected and always supervised by Helix staff.</li> <li>The samples were always under the direct control of Helix staff and were transported to the laboratory by a commercial transport contractor.</li> </ul> |
| Drilling<br>techniques | Drill type (e.g. core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, tripleorstandard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).  | <ul> <li>Diamond drilling (DD) and Reverse Circulation drilling (RC) were undertaken.</li> <li>DD: PQ, HQ and NQ drill core was collected using triple tube and all other industry practice methods.</li> <li>RC: 5 ½ inch diameter drill bit.</li> </ul>   |



| Criteria  | JORC Code explanation  | Commentary  |
|---|--|---|
| Drill sample<br>recovery                                    | <ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>   | <ul> <li>Core recoveries are recorded by the driller on core blocks and checked by a geologist or field technician.</li> <li>Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking and depths are checked against the depths recorded on core blocks. Rod counts are routinely undertaken by drillers as a further cross-reference for depth and core recovery.</li> <li>Samples were checked by the geologist for consistency and compared to the sample interval data for accuracy.</li> <li>RC bulk bag samples are not weighed, however recoveries are monitored and recorded by the supervising geologist.</li> <li>When poor sample recovery is encountered during drilling, the geologist and driller attempt to rectify the problem to ensure maximum sample recovery.</li> <li>Sample recoveries at CZ are typically good for both RC and DD, apart from when voids are intersected. The void intervals are recorded on geological logs.</li> </ul> |
| Logging   | <ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>  | <ul> <li>The drill core is stored in core trays at secure facilities in Parkes and Orange. The core is comprehensively logged and sampled by experienced Helix geologists or consultants.</li> <li>The core is entirely logged for lithology, alteration, degree of oxidation, structure, colour and occurrence and type of sulphide mineralisation.</li> <li>Note – some of the historic RC drill holes were not geologically logged as annotated in the plans and sections presented.</li> <li>Diamond core and RC chips are logged to an appropriate level of detail to increase the level of geological knowledge and increase the geological understanding of the CZ deposit.</li> </ul>   |
| Sub-<br>sampling<br>techniques<br>and sample<br>preparation | <ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is</li> </ul> | <ul> <li>Drill core is cut with a core saw and a half core sample is taken for laboratory analysis.</li> <li>The RC drilling rig is equipped with an in-built cyclone and splitting system, which provided one bulk sample of approximately 20kg to 30kg and a sub-sample of 2-4kg per metre drilled.</li> <li>All RC samples were split using the system described above to maximise and maintain consistent representivity. The majority of samples were dry.</li> <li>Bulk samples were placed in green plastic bags, with the sub-samples collected placed in calico sample bags.</li> <li>Field duplicates were collected by spear from green plastic bags. These duplicates were designed for laboratory checks.</li> <li>Certified Reference Material (CRM) standards and blanks are inserted into the sample</li> </ul>   |



| Criteria                                    | JORC Code explanation   | Commentary   |
|---|---|--|
|   | representative of the in-situ material collected includingfor instance results for field, duplicate/second-half sampling.  • Whether sample sizes are appropriate to the grain size of the material being sampled.  | <ul> <li>stream at approximately 1:35.</li> <li>Laboratory duplicate samples are split with a riffle splitter.</li> <li>A 2kg to 4kg RC sample was collected from 1m intervals and is considered appropriate and representative for the grain size and style of mineralisation.</li> </ul>   |
| Quality of assay data and laboratory tests  | <ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul> | <ul> <li>ALS Laboratory Services were used for Au and multi-element analysis work carried on out on 1m split RC samples and half core DD samples. The laboratory techniques below are for all samples submitted to ALS and are considered appropriate for the style of mineralisation at CZ:         <ul> <li>Crush and pulverize sample.</li> <li>Au-AA25 Ore Grade Au 30g FA AA Finish</li> <li>ME-ICP61 48 element 4 acid digest ICP-AES.</li> <li>OG62 Ore Grade finish for non-Au over range samples.</li> </ul> </li> <li>The QA/QC data includes standards, duplicates and laboratory checks.</li> <li>Duplicates for percussion drilling are collected from the one metre sample bag using a spear.</li> <li>QA/QC tests are conducted by the laboratory on each batch of samples with CRM standards.</li> </ul> |
| Verification<br>of sampling<br>and assaying | <ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>   | <ul> <li>Assays results are validated by standard relational database procedures and are verified by Helix management.</li> <li>Assay data are not adjusted.</li> <li>Geological data is collected using handwritten graphical log sheets, which detail geology (weathering, structure, alteration, mineralisation), sample quality, sample interval and sample number.</li> <li>QA/QC inserts (standards, duplicates, blanks) are added to the sample stream.</li> <li>RQD and magnetic susceptibility data is collected using a datalogger.</li> <li>All logged data, the assay data received from the laboratory, and survey data is loaded into a secure Access database and verified.</li> </ul>  |
| Location of<br>data points                  | <ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resourceestimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>  | <ul> <li>The drill collar positions were determined using a GPS (±5m).</li> <li>Grid system is MGA94 Zone 55.</li> <li>Surface RL data collected using GPS and verified by public Digital Elevation Models.</li> <li>Relief with the drilling zone ranges from 0m to 5m.</li> </ul>  |



| Criteria  | JORC Code explanation  | Commentary   |
|---|--|--|
| Data spacing<br>and<br>distribution                                 | <ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>                                 | <ul> <li>Drill holes were positioned to target extension of mineralisation along strike and down-dip of existing mineralisation. Deeper DD holes will test specific DHEM plates below the current resource wireframe. The PQ DD holes targeted known mineralisation to provide samples for metallurgical test work. The RC holes tested for shallow copper oxide resources and provided pre-collars for DD tails.</li> <li>Drilling has been conducted by Helix since 2013.</li> <li>The drilling had been conducted in a manner consistent with the procedures set out in this JORC table.</li> <li>Assays used in the current resource were generated by Helix.</li> <li>No compositing of samples has been undertaken.</li> </ul> |
| Orientation<br>of data in<br>relation to<br>geological<br>structure | <ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul> | <ul> <li>The position of the drill holes and the sampling techniques and intervals are considered appropriate for the geometry of the CZ mineralisation.</li> <li>Drilling is designed to intersect mineralisation as close to perpendicular as possible.</li> <li>Drill hole deviation will influence true width estimates of mineralisation. True width of mineralisation will be further assessed with detailed logging of orientated structural data and when the resource model is updated.</li> <li>Drill hole intersections of mineralisation are not considered to be biased.</li> </ul>   |
| Sample<br>security  | The measures taken to ensure sample security.  | Chain of Custody is managed by Helix staff and its contractors. The samples were freighted directly to the laboratory with appropriate documentation listing sample numbers, sample batches, and required analytical methods and element determinations.   |
| Audits or reviews   | The results of any audits or reviews of sampling techniques and data.  | No additional audits or reviews have been conducted for the drilling to date.  |



## Section 2 Reporting of Exploration Results

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

| Criteria   | JORC Code explanation   | Commentary  |
|--|---|---|
| Mineral<br>tenement and<br>land tenure<br>status | <ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overridingroyalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>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.</li> </ul>   | <ul> <li>The CZ resource is located on EL8768 approximately 55km SSW Nyngan.</li> <li>Helix has 100% beneficial ownership of EL8768, which is held by Solindo Pty Ltd, a 100% owned subsidiary of Alpha HPA Ltd. Ownership of EL8768 will be formally transferred to a 100% owned Helix subsidiary upon completion of an acquisition agreement with Alpha HPA (refer to ASX announcement of 2/09/2021).</li> <li>The tenement is in good standing.</li> <li>This is no statutory, minimum annual expenditure. Rather a program-based exploration commitment is applicable.</li> <li>There are no known impediments to operating in this area.</li> <li>The drill area is situated in a grazing paddock and can be accessed all year round.</li> </ul> |
| Exploration done by other parties                | Acknowledgment and appraisal of exploration by other parties.   | <ul> <li>Previous drilling, soil sampling and early geophysics was conducted by CRA in the 1980's.</li> <li>Small historic workings are present near CZ.</li> </ul>   |
| Geology  | Deposit type, geological setting and style of mineralisation.   | The project is considered to be prospective for structurally controlled copper.   |
| Drill hole<br>Information                        | <ul> <li>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:</li> <li>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 thecase.</li> </ul> | <ul> <li>Refer to Helix's previous announcements available at www.helixresources.com.au.</li> <li>Relevant dill hole information has been included in this announcement.</li> <li>Known mineralised zones have been targeted by the metallurgical test work drilling.</li> <li>The remainder of the drilling is targeting extensional copper oxide and copper sulphide resources.</li> </ul>  |
| Data<br>aggregation<br>methods                   | <ul> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such</li> </ul>   | <ul> <li>All assays reported are based on 1m samples.</li> <li>Mineralised intercepts for Cu and Au are averaged within a contiguous interval above a specified Cu cut-off grade with a maximum of 2m of internal dilution.</li> <li>Cu and Au intercepts were calculated for Cu cut-off grades of 0.1% Cu, 0.5% Cu and 1% Cu.</li> <li>No assay cut of high-grade material has been applied.</li> <li>No metal equivalent values have been calculated.</li> </ul>  |



| Criteria  | JORC Code explanation   | Commentary   |
|---|---|--|
|   | <ul> <li>aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>   |  |
| Relationship<br>between<br>mineralisation<br>widths and<br>intercept<br>lengths | <ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.         If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').     </li> </ul> | <ul> <li>Drilling is designed to intersect mineralisation as close to perpendicular as possible.</li> <li>Drill hole deviation will influence true width estimates of mineralisation. True width of mineralisation will be further assessed on analysis of orientated structural data and when the resource model is updated.</li> </ul>   |
| Diagrams  | <ul> <li>Appropriate maps and sections (with scales) and<br/>tabulations of intercepts should be included for any<br/>significant discovery being reported. These should<br/>include, but not be limited to a plan view of drill<br/>hole collar locations and appropriate sectional<br/>views.</li> </ul>  | Refer to Figures in this announcement.   |
| Balanced<br>reporting   | Where comprehensive reporting of all Exploration<br>Results is not practicable, representative reporting<br>of both low and high grades and/or widths should<br>be practiced to avoid misleading reporting of<br>Exploration Results.   | <ul> <li>The reporting is considered to be balanced and all material information has been disclosed.</li> <li>A Cautionary Statement regarding visual estimates of mineralisation abundance has been included with this report. It states that laboratory assays are required for representative estimates of mineralisation abundance.</li> </ul>   |
| Further work  | <ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>   | <ul> <li>Down hole EM (DHEM) will be undertaken on several holes completed in the current drilling program.</li> <li>Further DD and RC drilling and assaying is likely following assays and DHEM results.</li> <li>An update of the resource to JORC2012 is also planned in 2021.</li> <li>Regional auger soil sampling and surface EM is also planned to follow-up VTEM anomalies defined earlier this year.</li> </ul> |